MARCH, 1934

COTTON

Serving the

TEXTILE INDUSTRIES

Textile Division

The B. F. GOODRICH COMPANY

Silvertown, Georgia

THE first textile unit of The B. F. Goodrich Company, built in 1926, totaled 30,000 spindles. In 1929 it was increased to 80,000. Their complete manufacturing success is evidenced by the recent enlargement, now under construction, which will increase their southern tire cord mill to 135,000 spindles.

We take great pride in our repeated association with so successful and internationally known firm as the B. F. Goodrich Company. It is with great satisfaction that we can point to our connection with them, as their architects and engineers, on the *entire development.*

Our intimate knowledge of every operation in textile manufacture, building requirements, housing layouts, etc., is of great assistance to any firm which contemplates either new projects, alterations or relocation and better grouping machinery.

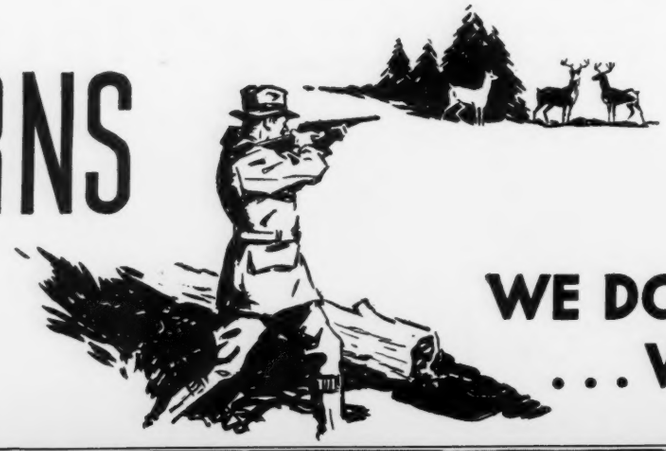
With a staff of experienced engineers—textile, mechanical, electrical and civil — we are prepared to take your problems, study each aspect, and work out a comprehensive plan for competitive efficiency. Preliminary consultation is entirely without obligation.

ROBERT AND COMPANY

ATLANTA INCORPORATED GEORGIA

Architects and Engineers

YARNS



WE DON'T TELL 'EM ...WE SELL 'EM

YOU CAN ALWAYS DEPEND ON F. P. YARNS

Who cares whether yarns of hunting prowess are dependable or not? ¶ But with cotton yarns it is different. On them hinges the economy of manufacturing operations and the salability of merchandise. ¶ You can depend on Franklin Process yarn offerings, for they come from reputable spinners who standardize quality from one spinning to the next. ¶ These offerings include all popular counts and qualities (most of which are carried in stock), natural, bleached or colored, in almost any standard put-up. Recommendations, samples, prices on request.

FRANKLIN PROCESS COMPANY

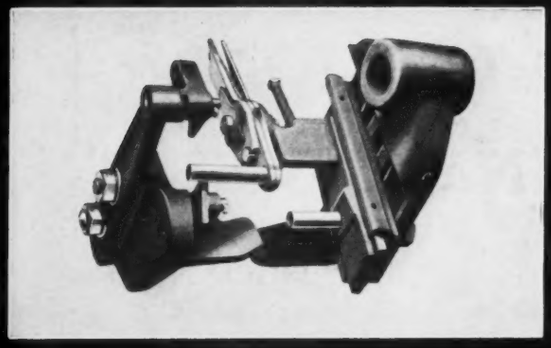
Yarn Merchants and Yarn Dyers. Also Manufacturers of Glazed Yarns and Machines for Dyeing and Bleaching Yarns in the Package Form, Cotton and Wool Raw Stock, Worsted Tops and Worsted Yarn on Jackspools, also Machines for Soaking Silk. Main Office and Plant at Providence, R. I. Branch Plants at Philadelphia, Pa., Greenville, S. C., and Chattanooga, Tenn. New York Rep., 40 Worth Street

FRANKLIN PROCESS

COTTON YARNS AND CUSTOM YARN DYEING

COTTON is published monthly by W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga. Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

The Stafford Thread Cutter



Because he realized the need of something to prevent loose filling ends from being carried back into the cloth after a bobbin transfer on Feeler Looms, our Mr. Stafford—you all know him as a Draper man since 1898—invented the Thread Cutter that bears his name.

It was born of necessity—to cure a common trouble.

Every Feeler Loom should have it because it has proved a sure cure for that trouble.

It works this cure by cutting the filling at the Eye of the Shuttle. All Weavers know what that means.

The Midget Feeler, the Stafford Thread Cutter and the new Thread Cutting Temples we are now building make up a trio of trouble-eliminators that will give you better cloth and less seconds.

DRAPER CORPORATION

Hopedale Massachusetts

Southern Offices Atlanta Ga and Spartanburg S C

THERE'S POWER IN TEXACO SPINDLE OILS

RESULTS ACCOMPLISHED in many well-known mills over periods of years have shown power savings of from 5 to 15 per cent. Texaco Spindle Oils were developed and, from time to time, improved by The Texas Company during many years of continuous research and experimentation both in the laboratory and in the mills.

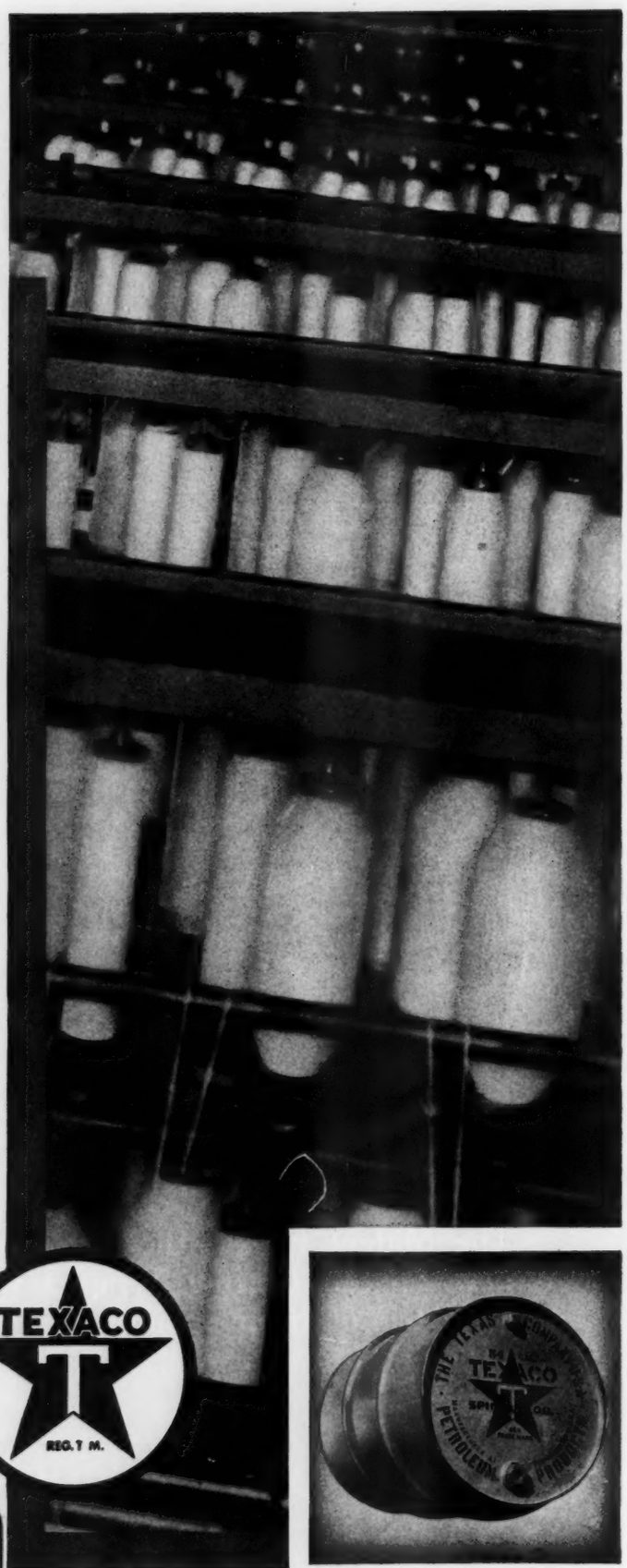
Spinning room economies—in lower power consumption and in the reduction of time for cleaning spindle bases, are substantial. Texaco Spindle Oils are free from gum-forming impurities. They are examples of the many special Texaco Lubricants used in the industry.

It will surely be worth your while to find out more about Texaco Lubrication and the specialized Texaco engineering service for the textile industry. Ask a Texaco representative to show you what has been done in other mills.

We believe you can effect these same economies. Write The Texas Company.

There is a Texaco Lubricant for every purpose

THE TEXAS COMPANY, 135 E. 42nd St., N.Y.C.
(*Sales Engineering Dept.*)

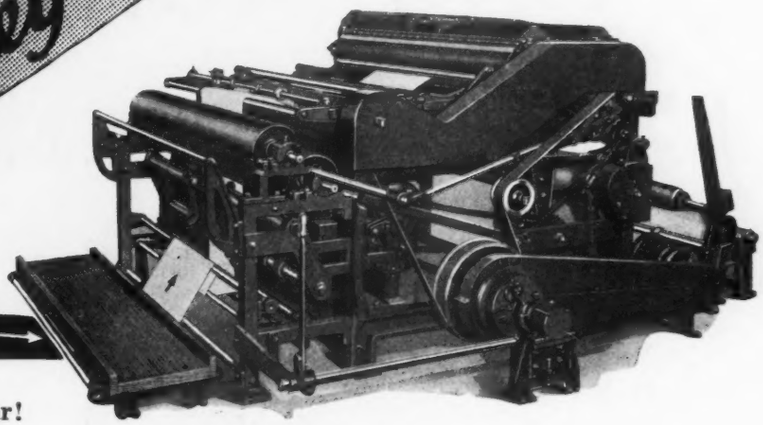


NRA

TEXACO LUBRICANTS

King Cotton's surest aid for money makers

FREE TRIAL IS OUR PROOF



Save thousands each year!

Have blades that actually shear lint, threads, foreign matter and prevent "off prints" or poor finish obtained when fabrics are simply scraped.

Exhaust cut-out and seam flattener prevent long or wrinkled sewings from catching in blades that results in spoiling many yards of goods or smashing blades.

Automatically operated to entirety by selective fingers that **DO NOT** miss lifting blades for seams, but will not lift for slubs to leave portions of fabric unshorn.

Rugged construction that will last a life time.

These reasons are why Parks & Woolson shears are better

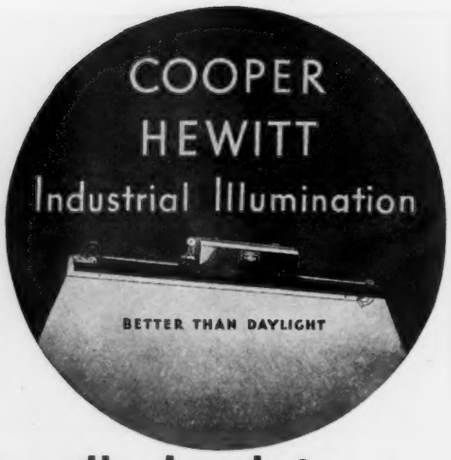
PARKS & WOOLSON MACHINE CO., SPRINGFIELD, VERMONT

P. B. RAIFORD, Jr.

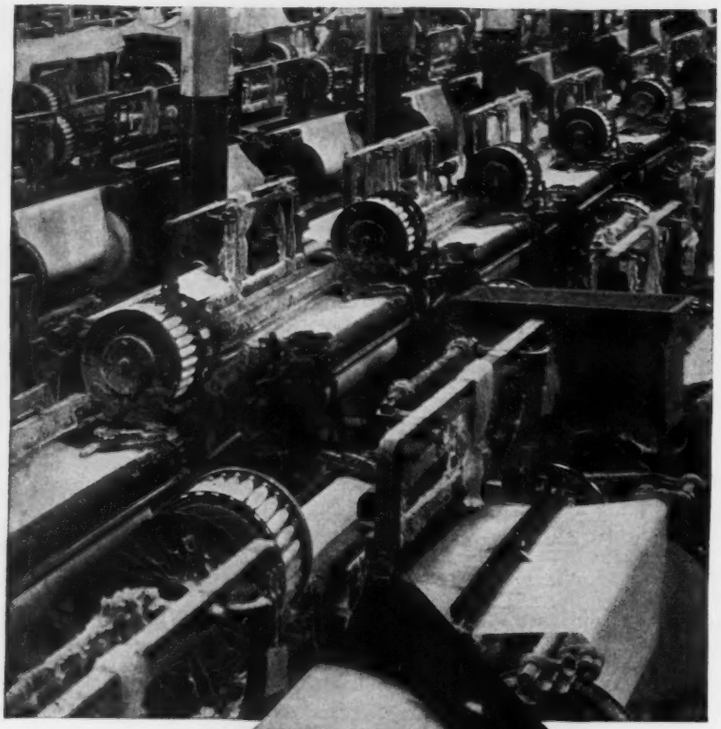
CONCORD, NORTH CAROLINA

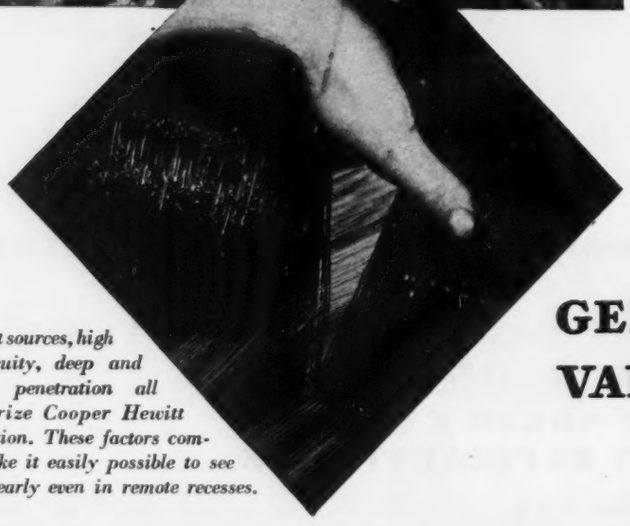
SOUTHERN REPRESENTATIVE

THIS LIGHT



seeks out the spots where it's usually hard to see





Long light sources, high visual acuity, deep and intricate penetration all characterize Cooper Hewitt Illumination. These factors combined make it easily possible to see details clearly even in remote recesses.

Cooper Hewitt mercury-vapor lamps deliver the proper quantity and quality of light at the working level where it is really needed. Their light is free from glare, and virtually shadowless.

Weavers find that Cooper Hewitts make it easier to keep a constant check on heddles and drop-eyes, help them spot thin places, prevent mis-draws and correct over-shot and under-shot picks, thus reducing the number of cuts rejected as seconds.

Cooper Hewitt lighting makes it possible for loom-fixers to work without flashlights or droplights, with both hands free to do a quicker, better job—even on adjustments usually difficult to see, such as setting filling forks, adjusting warp stop motion or correcting jumping shuttles.

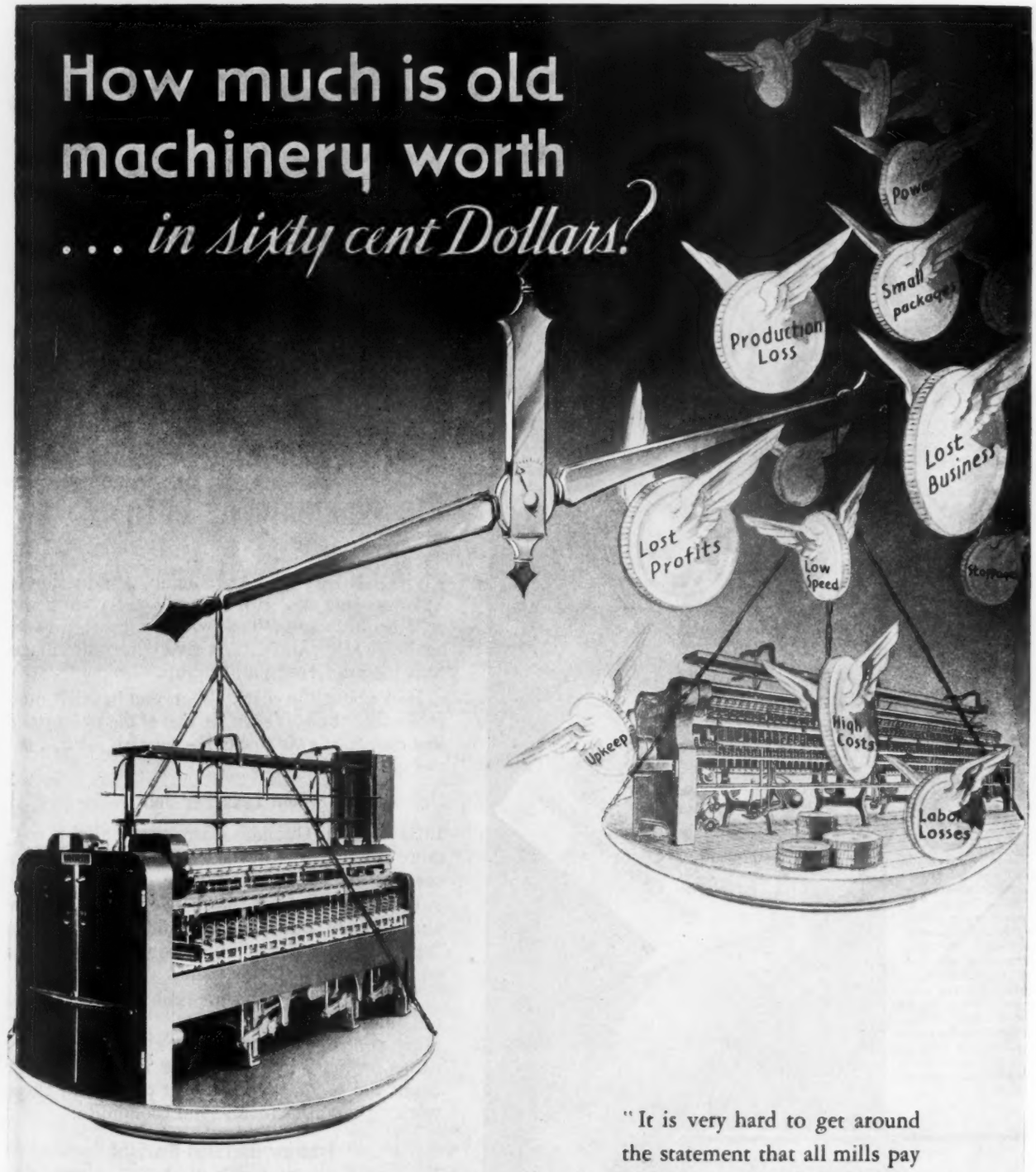
A trial with a few lamps for thirty days will prove how Cooper Hewitts can pay dividends in more efficient production right in your own plant. Write today for full information: General Electric Vapor Lamp Company, 853 Adams Street, Hoboken, New Jersey.

NRA MEMBER U.S. WE DO OUR PART

GENERAL ELECTRIC VAPOR LAMP COMPANY

585 Copr. 1934, General Electric Vapor Lamp Co.

How much is old machinery worth ... *in sixty cent Dollars?*



"It is very hard to get around the statement that all mills pay for modern equipment whether they purchase it or not."

(*Editorial*)

WHITIN MACHINE WORKS **WHITIN** WHITINSVILLE, MASS.

PAINTING INSIDE..

Refined Linseed Oil commonly used in white oil paints. Note amber color.
The same refined linseed oil after "Rice Processing." Practically colorless.

The vial above contains refined linseed oil commonly used in white oil paints. The yellow color of this linseed oil disappears when the oil is properly mixed with white pigments. The white paint it makes *looks* white. But don't be fooled. The "yellow" is still there. Sooner or later it will appear upon your painted ceilings and walls.

This is how the same highly refined linseed oil, as contained in the first tube, appears after it has been treated by the "Rice Process." It is almost pure white. This "Rice Processed" linseed oil is the principal reason why Interior Barreled Sunlight remains white, year after year. This process furthermore gives Barreled Sunlight its great paint-saving hiding power, its remarkable time- and labor-saving ease of flow.

YOUR SURETY . . .

We maintain that Interior Barreled Sunlight, the "Rice Process" White, will remain white longer than any oil-gloss paint or enamel, domestic or foreign, applied under the same normal service conditions and according to our specifications. If it does not do so, we will give, free, enough Barreled Sunlight to repaint the job.

Consider the "non-yellowing" feature of Interior Barreled Sunlight . . . the outstanding whiteness of Outside Barreled Sunlight—above all, the economy of both

ORDERS are coming in again. Production is speeding up. It's time to send your plant ceilings and walls "back to work" with a good coat of white paint . . . to give your mill village that long deferred painting-up.

How about the cost? When you figure it out, remember this—*it's not the cost of the paint itself that counts, it's the cost of the finished job . . . the cost of maintaining it.*

Cost Less Per Job

Interior and Outside Barreled Sunlight cost more *per gallon* than most paints. But they cost less *per job.*

For one thing, you need less paint. Interior and Outside Barreled Sunlight have amazing "spreading" and "covering" powers. Two coats equal three of ordinary paints.

For another thing, your time and labor costs are lower. Both paints are "easy working." Have none of the "drag" that slows up painters using ordinary paints. Since time and labor count for ⅔ of the cost of a paint job, these working qualities mean vital economies.

Interior Barreled Sunlight Resists Yellowing

Painted with Interior Barreled Sunlight, your plant ceilings and walls will remain bright, white, year after year. The "yellow" present in paints made with ordinary linseed oil is taken out by the exclusive "Rice Process," when Interior Barreled Sunlight is made. No fear of

Interior and

OUTSIDE... BOTH?

Intensely white, handsome, durable—Outside Barreled Sunlight was chosen for all cottages of Indian Head Mills of Alabama. Indian Head Mills Plant also painted throughout with Interior Barreled Sunlight.

"yellowing," or the frequent repainting it means, need worry you.

Smooth, dirt-resistant, washable as tile, Interior Barreled Sunlight materially reduces maintenance costs. Soap and water do the upkeep job quickly, cheaply. Repeated washings have practically no effect upon the glossy surface of Interior Barreled Sunlight.

Outside Barreled Sunlight— the Whitest White

Mill villages painted with Outside Barreled Sunlight are noted for their pronounced whiteness, trim good looks. This is not surprising when you consider that master painters know Outside Barreled Sunlight as the *whitest* of all outside whites.

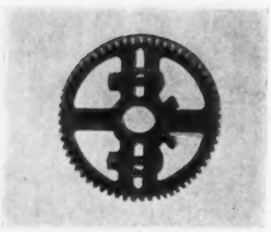
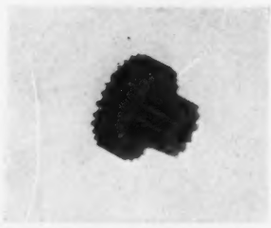
But that is only half the story. Whether used in white, or tinted with oil colors, the surface of Outside Barreled Sunlight *endures*. It wears away slowly and evenly. When repainting time comes, less scraping and sandpapering are needed. More time and labor saved!

Write for the facts. Address U. S. Gutta Percha Paint Company, 8-C Dudley Street, Providence, R. I. Branches or distributors in all principal cities. (For Pacific Coast, W. P. Fuller & Co.)

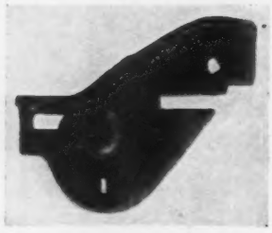
"Save the surface and you save all"

Outside Barreled Sunlight

Reg. U. S. Pat. Off.

Made by HENDERSON



means matchless performance in textile repair parts

"Made by Henderson" is a guarantee that textile repair parts fit with precise accuracy and last longer than ordinary parts.

The materials used are high quality—the precision patterns we have for practically all makes of textile equipment insures accuracy—efficient equipment enables us to produce a high quality product—our skilled workmen take pride in their work and are always endeavoring to uphold the reputation of HENDERSON quality.

Long experience in textile equipment with knowledge of the weak spots in different parts, combined with our honest and conscientious determination to make BETTER parts, is the reason why "Made by Henderson" means satisfaction, economy and long life in textile repair parts. Quotations on any part, large or small, gladly sent on request.

HENDERSON FOUNDRY & MACHINE WORKS

HAMPTON GEORGIA

DU PONT ANNOUNCES A WHITER MILL WHITE

DULUX

(Reg. U. S. Pat. Off.)

dries without "after-tack"

That's why DULUX Mill White resists dirt collection . . . stays cleaner and whiter than other mill whites.

IN DULUX Mill White you get a finish for your plant interior that is whiter than other finishes you know.

But—this is even more important. DULUX Mill White is a whiter finish that stays whiter.

And here's an easy test to show how DULUX resists dirt collection and *stays* whiter:

Draw your finger across the sole of your shoe (or any place where it will collect plenty of dust and grime).

Then drag it across a panel finished half in DULUX Mill White and half in any other mill white. (See illustration.)

The DULUX surface will show almost no dirt.

Your finger slides across the DULUX surface without resistance. It is hard and tile-like. Now touch the surface finished with the other Mill White. With a little pressure you have a feeling that the finish wants to hold on to your fingertips. Your fingers "skip" along as you draw them across the panel. It is due to "after-tack." It causes the finish to pick up every smudge, every fingerprint.

Get Free Test Panel

Make this easy test in your own plant. Compare the results with your present Mill White. See for yourself why DULUX *stays* cleaner and whiter. For free panel and copy of the new booklet, "DULUX Mill White," address E. I. du Pont de Nemours & Co., Inc., Finishes Division, Wilmington, Del.

Why DULUX Mill White is ideal for your plant

Is Whiter at the start.

Stays Whiter. Does not yellow.

Dries Quicker — DUST-free in 3 to 5 hours. Ready for re-coating the next day.

Easy to Apply — Shortens painting time.

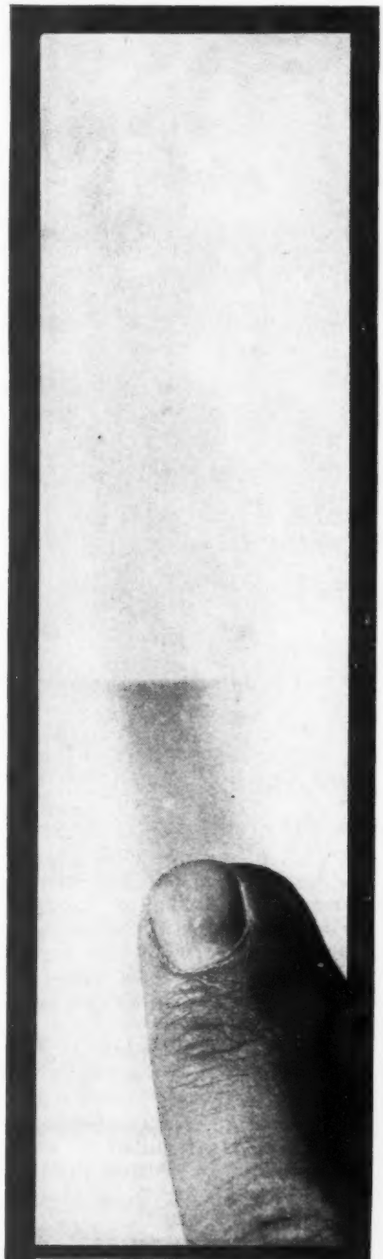
Hides Better — Assures hiding and coverage economy.

Has Higher Gloss — Holds sheen longer.

Is More Durable — Resists chipping and cracking.

Collects Less Dirt — Dries without "after-tack."

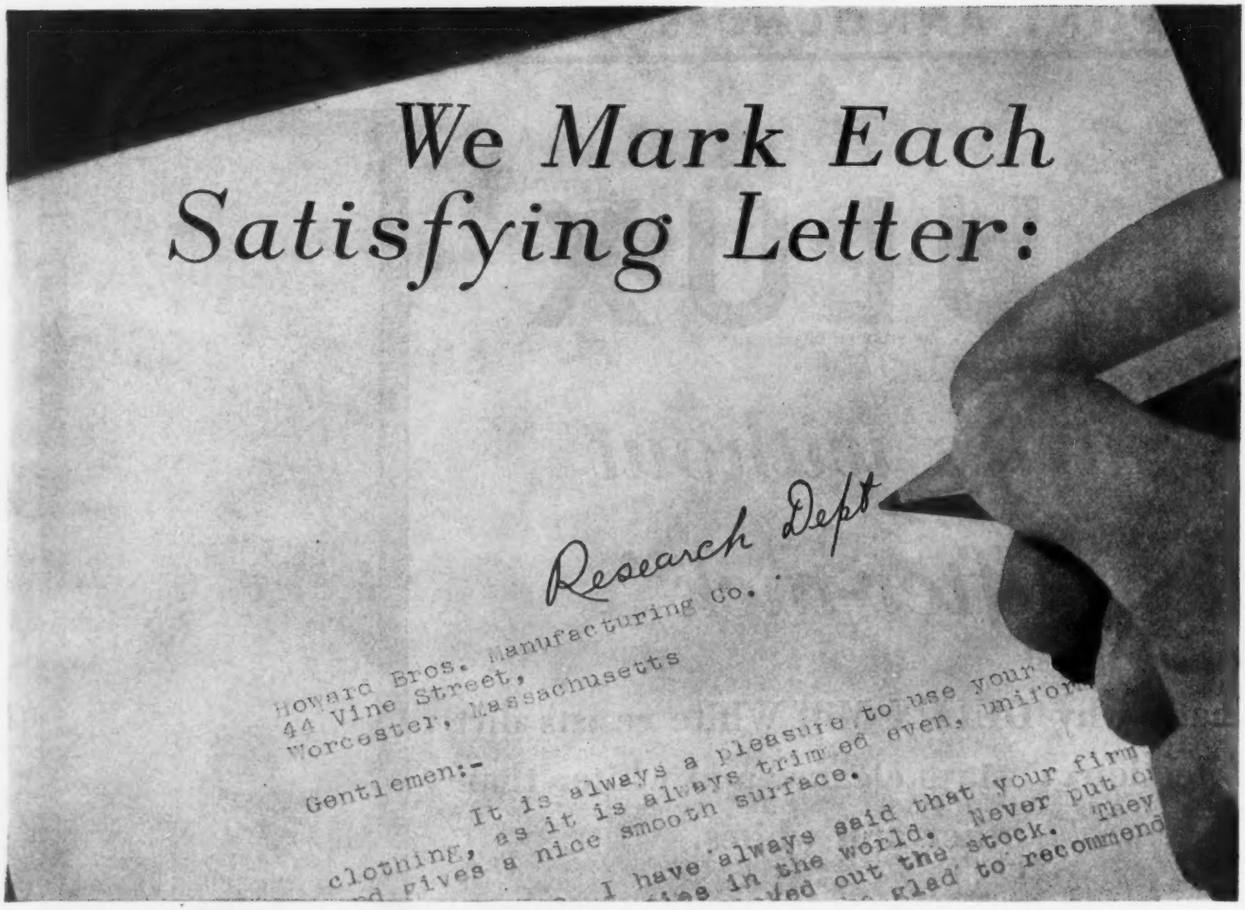
Stands Repeated Washing — Surface is harder, smoother and non-porous.



The DULUX panel does not smudge because it dries smooth and hard without "after-tack." The ordinary mill white holds dirt in its surface—even after washing.

DU PONT
REG. U. S. PAT. OFF.

DULUX
REG. U. S. PAT. OFF.
MILL WHITE


We Mark Each
Satisfying Letter:
Research Dept
Howard Bros. Manufacturing Co.
44 Vine Street,
Worcester, Massachusetts
Gentlemen:-
It is always a pleasure to use your
clothing, as it is always trimmed even, uniform
and gives a nice smooth surface.
I have always said that your firm
in the world. Never put out the stock. They
glad to recommend

OUR files bulge with customers' letters that express satisfaction with some Tuffer card room product, Tuffer hand stripper cards or wire heddles with the inserted eye. Such comments naturally please us but in the same breath they make us dissatisfied. They make us want to improve every Tuffer product that leaves our factory.

So we forward each letter to our Research Department with directions to better the product our customer has praised.

This habit started the day we entered business. It has resulted in a vast series of improvements in Tuffer products painstakingly developed by our Research Department. Tuffer foundation, as one example, has undergone many changes to bring it to its present high standard, and we are continuing now as you read this to discover methods and materials to make it better. Tuffer wire, cadmium protected for rust resistance was unknown a few years ago. The temper and sharpness of Tuffer wire have reached a point of uniformity unattainable without constant research.

We have noticed too that the more we are dissatisfied and the more we strive to improve Tuffer products, the more letters of appreciation we receive.

Tuffer Products
Card Clothing
Napper Clothing
Cylinder Fillets
Doffer Fillets
Stripper Fillets
Hand Stripper Cards

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.

Tuffer Products
Burnisher Fillets
Emery Fillets
Wire Heddles
Top Flats Recovered and extra sets loaned.

HOWARD BROS. MANUFACTURING CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plant
244 Forsyth Street,
Atlanta, Ga.

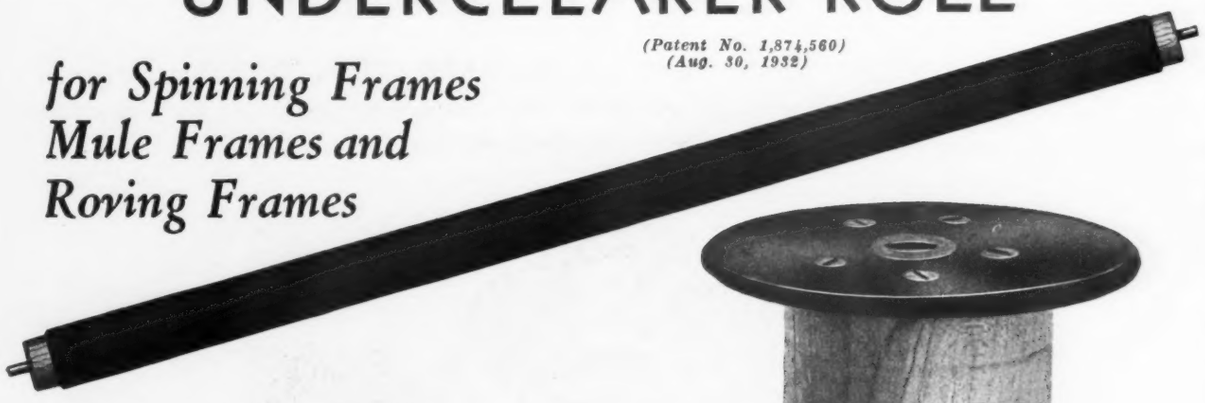
Branch Offices
Philadelphia, Pa., Dallas,
Texas, and Washington, D. C.

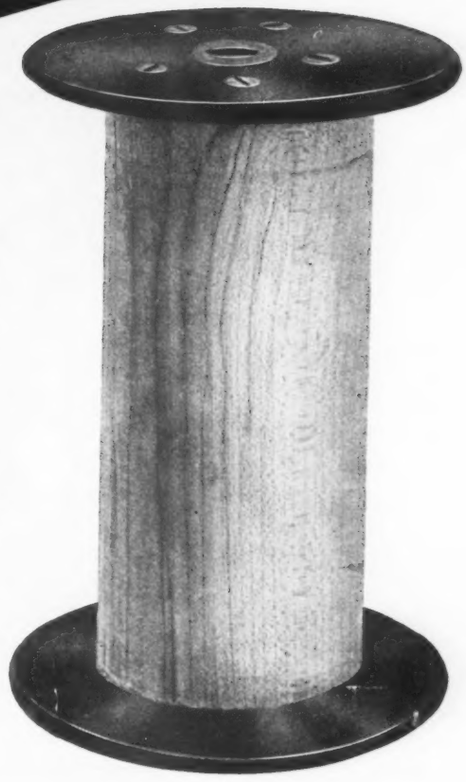
The Improved

LUCAS
UNDERCLEARER ROLL

(Patent No. 1,874,560)
(Aug. 30, 1932)

for Spinning Frames
Mule Frames and
Roving Frames





Absolutely True Running
Cleans 50% Easier · · ·
No Recovering Expense

Scores of textile mills, who have become enthusiastic users of the LUCAS roll, state that it is worth three times the price of the ordinary wood roll covered with cloth or other material.

It is so light in structure, easy to handle, keeps the fluted rolls perfectly clean and will not let fly collect in bunches. It catches the broken end immediately which eliminates coarse, heavy threads in the yarn. When it needs cleaning, it can be stripped easily and quickly with the hand. It always runs absolutely true on the frames.

With ordinary care, this roll will last the life of the steel gudgeon pins without the necessity of recovering.

We will gladly send you one for trial. Send us one of your rolls for matching purposes, and let us prove to you why the LUCAS is known as the most perfect underclearer roll on the market.

WE ALSO MANUFACTURE

Higher Quality Bobbins of maple with steel, fibre, bakelite and dogwood heads; Enamelled Bobbins; Flyers; Travelers; Spindles; Thread Guides; Swifts and Swift Sticks; Creel Buttons and Mill Nuts; and other supplies for textile, rayon and silk mills.

THE L. M. HARTSON CO.

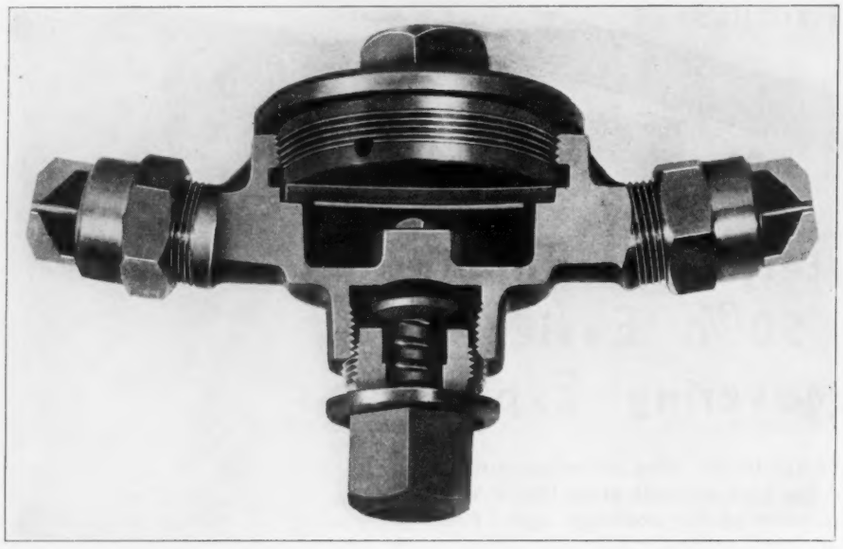
Established 1866

NORTH WINDHAM, CONN.

Southern Representative Edward F. Cook
Cook-Taylor Co., 1906 Brevard St.
Charlotte, N. C.

THE RIHCO HUMIDIFIER HEAD EMPLOYS AN ENTIRELY NEW PRINCIPLE

Air and water are mixed OUTSIDE OF THE HEAD, with the WATER UNDER PRESSURE as well as the air. This assures a correct proportion of air and water, and utilizes every ounce of air pressure and every cubic inch of air for atomizing water. There is no waste energy.



THIS PICTURE OF A CROSS SECTION OF THE RIHCO HEAD SHOWS HOW IT OPERATES

Water is always in the small chamber in the bottom of the head, but can only enter the main water compartment above when the check valve is open. This valve is kept closed by a spring when the Head is not in operation.

The main water compartment is covered by a rubber diaphragm, above which is the air compartment. When air is turned into the air compartment, it depresses the diaphragm, and opens the check valve. As long as the air pressure is on the Head, and is greater than the water pressure, the check valve is open. When the air is turned off, or when its pressure falls below that of the water, the check valve closes instantly, and automatically.

The RIHCO Head always expels the correct proportion of air and water at the proper pressures.

The most efficient atomizer is the one which gets the most possible evaporation from the least possible air at the lowest possible pressure. This is just what the RIHCO does. All the air, and all the pressure is used for atomizing; there is no waste.

Exclusive Southern Agents

AldricH MachinE

Greenwood, WorkS South Carolina

"MY FIGURES SHOW A CONSIDERABLE SAVING IN LINT COTTON NOW."
"SO DO OURS. PRODUCTION IS UP, TOO, SINCE WE'VE HAD THE NEW TEMPERATURE CONTROL IN THE SLASHING PROCESS."

These men are talking of dollars and cents saved—and earned—by a Taylor System of Slasher Control. Do you know how this Control can save your mill money? Let us help you find out.

LET'S LISTEN to other superintendents a minute. "A saving in steam," says one, "is only one feature of the automatic temperature control we use in the slashing process. The control keeps the cylinder temperature so constant that the warps come off with the exact moisture content. It has improved our weaving."

"The Taylor Temperature Control System," adds another, "has enabled us to eliminate soft warps and reduce our hard size. It gives us a uniformly sized warp and has increased our production."

Here are experiences of superintendents of large southern mills. Ask them or many other mill executives to get along now without Taylor automatic temperature control, and we'll wager your answer will be a quick and emphatic "NO!"

They have found that an investment in this proved system of temperature control in the slashing process pays dividends far out of proportion to its cost. It pays them by effecting substantial economies in warp preparation and in weaving. It pays them in profits from sale of higher quality, more uniform goods at the best prices.

A Taylor System automatically assures a better, more uniform size, more efficient warp sizing, and maintenance of correct drying cylinder temperatures. To the Weave Room this brings stronger, more elastic warps. It causes fewer loom stoppages, more efficient work by weavers and machines, less shedding, and increased production of uniformly weighted and finished goods. A Taylor System soon pays for itself—usually in a year, and frequently in less time.

Get this help and this booklet

Remember that this System is not a collection of unrelated temperature instruments, but a unified system of indicating, recording and controlling instruments designed to fit your specific requirements and installed under direct supervision of Taylor engineers.

Let us see how Taylor Control can meet your needs. Let a Taylor Representative see your mill set-up. He will tell you more about this system without placing you under any obligation. Behind him is the entire Taylor Engineering Department to answer your problem. Meanwhile, write for our booklet, "Increasing Loom Production with Decreasing Costs." For the Taylor Man or the booklet, write to sales offices in Atlanta, Boston and Toronto. Or to Taylor Instrument Companies, Rochester, N. Y.

Taylor

Indicating | Recording • Controlling

TEMPERATURE *and* PRESSURE INSTRUMENTS

The name Taylor now identifies our complete line of products, including Tycos instruments.

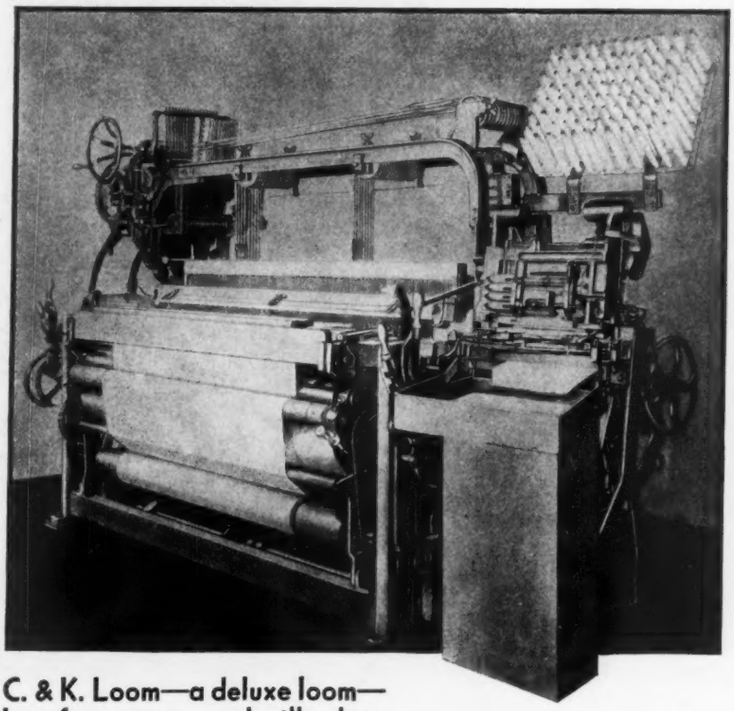
Sales Builders for SOUTHERN TEXTILES

New Designs
Reproductions

LABELS • TICKETS
BANDS • HANG TAGS •
BOLT ENDS • RIDERS • •

JACOBS GRAPHIC ARTS COMPANY
CLINTON___SOUTH CAROLINA

Crompton & Knowles Say:—

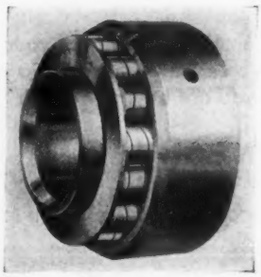


C. & K. Loom—a deluxe loom—but fine rayon and silk dress fabrics need the best.

"Weavers of quality fabrics would not think of buying looms without Hyatt Bearings"

C. & K. Intermediate Head Shuttle Changing Super Silk and Rayon Looms same as recently purchased by Duplan, Skinner and other famous weavers, are equipped with 10 Hyatt Roller Bearings—on the crankshaft, bottom shaft, rocker-shaft and take-up roll. Hyatts are used because they take all the loose motion, sticking, binding and oil-spotting out of the list of weavers' troubles.

Weavers of Cotton Fabrics Can Have Modern Hyatt-Equipped Looms, too



Why put up with endless trouble which is easily overcome by replacing obsolete cast-iron bearings with modern, inexpensive Hyatts. On your orders for new looms tell the builder to furnish these better bearings—Hyatts—which help prevent start marks, oil-spotting and eliminate vibration. Hyatt Roller Bearing Company, P. O. Box 476, Newark, N. J.

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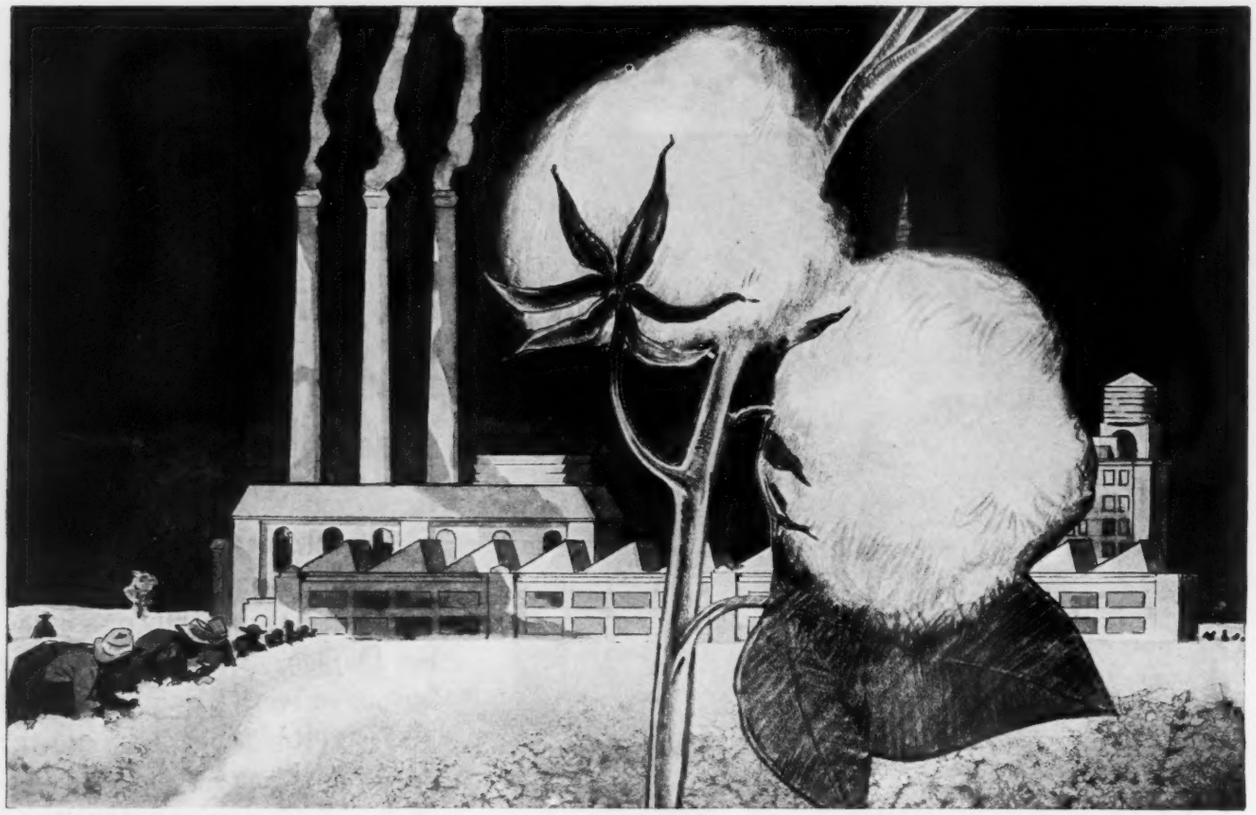
ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS



Red Ink Fuel . .

or Black ?

Codification of the Cotton Industry has placed a premium on efficient plant operation. Modernization of production methods and machinery operates directly on the profit and loss statement — as a major contributing factor to a profitable earnings report.

No plan of modernization is complete or fully operative unless it includes a complete and exhaustive fuel survey. The right fuel *can* and *often does* mean the difference between red and black ink on the ledgers.

General Coal Company offers, without obligation, complete fuel surveys conducted by recognized fuel engineering experts. The strategic location of General Coal properties and the wide range of coals available make a General Coal Fuel Survey really mean something in the way of service for fuel users.

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ARE SAVING Hundreds of Dollars ANNUALLY

And the savings experienced with the SONOCO Cork Cot are not alone in its longer wearing features, but are an accumulative saving that commences with a low first cost and builds up, with economy and ease of application, longer life, increased production and improved quality spinning.

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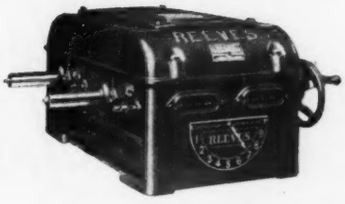
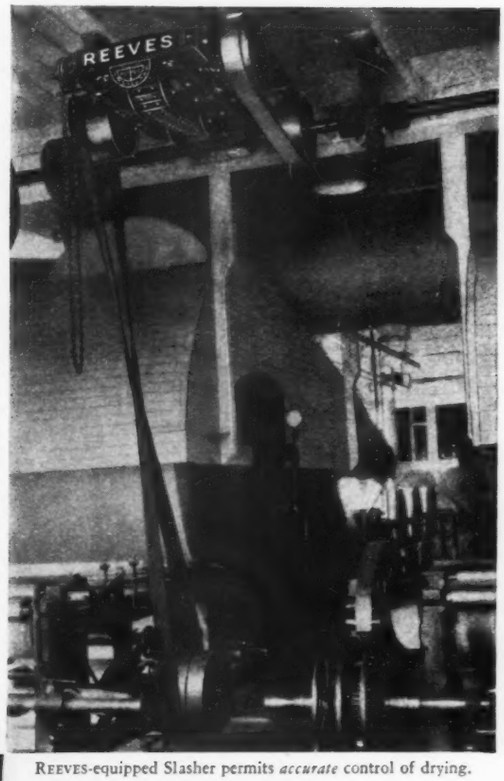
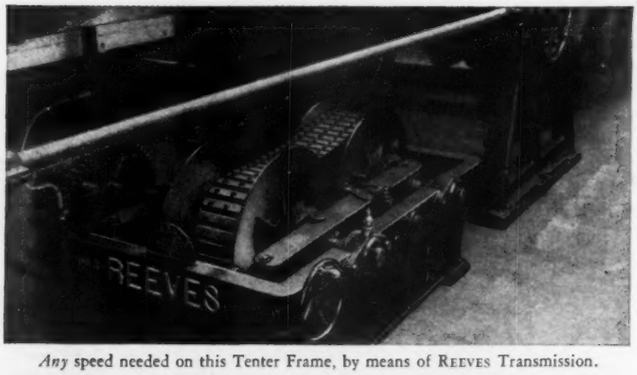


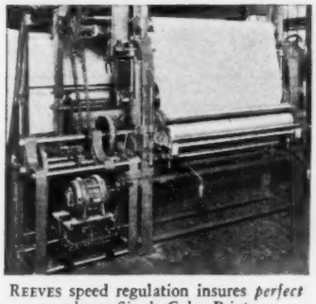
The TEXTILE INDUSTRY'S *Approved Method* FOR SECURING INFINITE, ACCURATE SPEED REGULATION



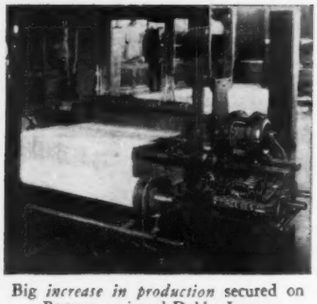
REEVES-equipped Slasher permits *accurate* control of drying.



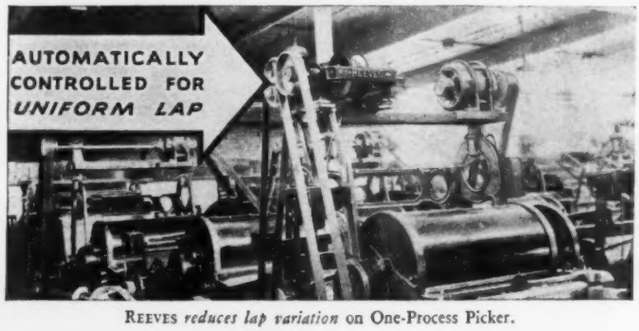
Any speed needed on this Tenter Frame, by means of REEVES Transmission.



REEVES speed regulation insures *perfect results* on Single Color Printer.



Big *increase in production* secured on REEVES-equipped Dobby Loom.



REEVES *reduces lap variation* on One-Process Picker.

IF *any* machine in your plant is *lagging behind* your standards of smooth, fast, efficient production, that machine can be inexpensively improved and modernized—*immediately*—by applying the REEVES Variable Speed Transmission.

This fact has proved out *so often* in hundreds of textile plants that it has become a RULE—and a mighty good one to follow!

On a REEVES-equipped machine, the *correct speed* for *every* changing requirement can always be *instantly secured* and *accurately maintained,* whether control is by operator or entirely automatic.

The REEVES is made in a complete line of sizes, designs and speed ranges. Provided with most efficient type of control for any specific need. Easily and quickly installed. . . . Also supplied as *standard equipment* on many new textile machines. . . . For quick facts on any application, write REEVES engineers. No obligation.

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Single Room & private bath $3.00

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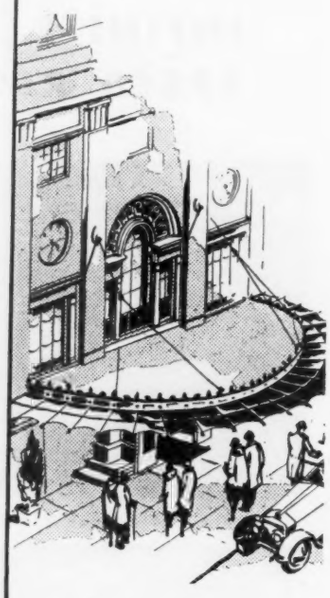

WALTON H. MARSHALL, Manager
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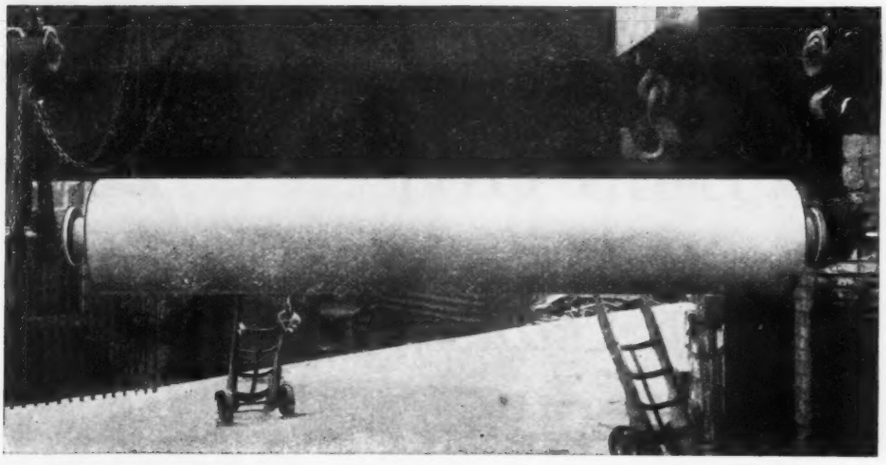
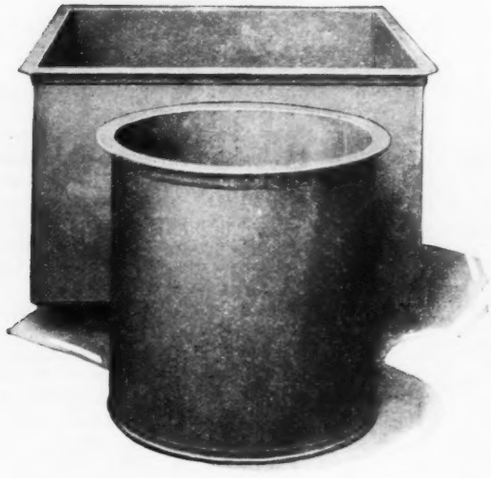
The Della Robbia Room

BETTER FINISHING

is now accomplished at higher speeds

A ten-foot Condor rubber-covered bleach-house washer roll just ready for installation. Many of our rolls of this type are still in service after 10 years' use.





Condor Rubber Covered Rolls are designed to meet every condition of service in the finishing of Textiles and to withstand the action of chemicals used in the various processes without loss of resiliency, durability, or efficiency.

Condor Rolls do not surface-harden, do not oxidize, and do not change density while in use or in storage. Their constant uniformity contributes to better finishing at higher speeds.

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Manhattan rubber linings adhere perfectly to the metal surfaces of tanks and pipes. The life of your equipment is greatly lengthened simply by giving it a protective rubber coating. The Manhattan method of lining and covering metal can be applied to practically every shape and size. It is economical and practical. Estimates and recommendations furnished on request.

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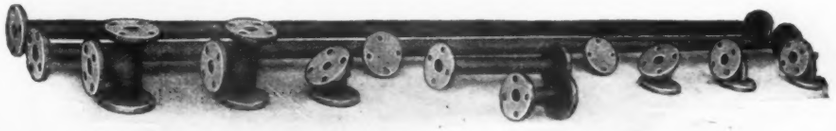
Flat Belt	Steam Hose
Air Hose	Mill Sundries
Cone Belt	Suction Hose
Acid Hose	Oilless Bearings
Water Hose	Rubber Lined Tanks

Rubber Covered Rolls
Industrial Brake Blocks and Lining



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OF RAYBESTOS-MANHATTAN, INC.

EXECUTIVE OFFICES AND FACTORIES, PASSAIC, NEW JERSEY

Automatic Control WIPES OUT Costly Peaks!

Keeps your water supply uniformly soft . . . reduces process difficulties

SOAP curds—"hungry" spots—sub-standard quality, vicious effects of hard water! Throughout the textile industry zeolite water softeners have been installed to root out these troubles and take all hardness out of the water supply before it enters the mill.

A simple, efficient and money-saving solution to a troublesome problem. But there is still an unknown factor—the human element. If the operator of the softener follows instructions, regenerates on time, with thorough washing and correct dosage of salt, all is well. But often other duties interfere, the softener overruns, "shots" of improperly treated water enter the process work, costs rise to a sharp peak.

This is a condition possible in any mill. But now it can be ended permanently.

Permutit automatic control never forgets. Even regeneration and back-washing are automatically carried out without any attention on the part of the operator. Periodic loading of salt into the brine saturator is the only attention the equipment requires.

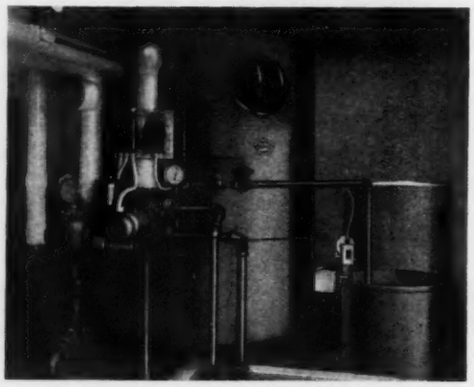
So efficient is Permutit's Automatic Control that soft water is produced at a lower cost per thousand gallons than ever before. Since present equipment can be inexpensively converted to automatic operation, the conversion charge is quickly returned by additional savings.

Automatic zeolite water softeners are the latest addition to Permutit's line of water treating equipment. Hardness, dirt, color, iron, oil, manganese, taste can all be removed from water.

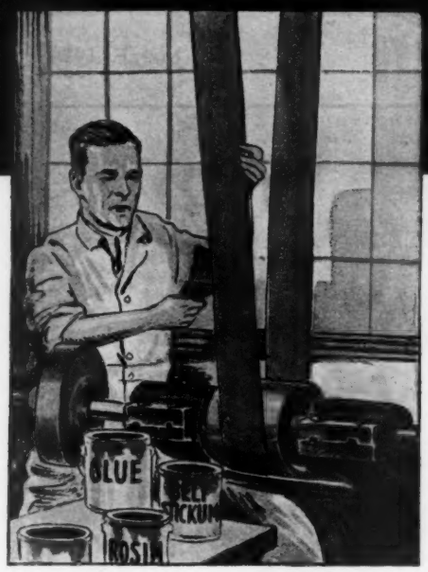
Write for a copy of our bulletin on Automatic Control—it's free of cost or obligation. Included with it will be "Reducing Textile Costs & Troubles"—a 24-page fact-full book that you will find of great interest. Send for your copies today. The Permutit Company, 330 West 42nd Street, New York, N. Y.

7 POINTS OF SUPREMACY

1. All operations automatically carried out under precise control.
2. Completely softened water—no overrunning, no under-regeneration.
3. Thorough washing assures clean, active zeolite.
4. Saves salt—uses only the absolute minimum required.
5. Less floor space—more salt storage.
6. Most efficient zeolite water softener ever built.
7. Automatic features can be applied to any existing zeolite water softener.



Permutit *Water Treating Equipment*



Why fool with those smooth belts that slip and waste power?

. . . Put on a VIM TRED LEATHER BELT *and watch it pull!*

YOU can throw away your sticky belt dressings and forget your belt worries when you equip your drives with VIM TRED—"The Non-Skid Belt." Its "live," resilient, treaded surface grips the pulley like a non-skid tire grips the road, and assures you of full speed, trouble-free performance on every drive.

Only VIM TRED offers you these advantages:

1. DELIVERS MORE POWER AND MORE SPEED to your machines because it has more gripping power than smooth belting.

2. HUGS THE PULLEY AT ANY SPEED. VIM TRED is so soft and flexible that it grips the pulley firmly at any speed and delivers a smooth, even flow of power.

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4. RUNS SMOOTHER AND WITHOUT VIBRATION. VIM TRED is pressed to absolutely uniform thickness by the tremendous pressure used in producing the non-skid tread.

5. STRONGEST BELT MADE because it is made of VIM Leather—the toughest, strongest belting material known.

6. LASTS LONGER because it eliminates the two chief causes of belt wear—**SLIPPAGE,** which causes frictional heat, and **DUST,** which grinds away the face of a belt.

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Installation of this first "large" piece of

Monel Metal Equipment

marked the start of modern dyeing machinery

UP in the little town of Drummondville, Quebec, is a rotary dyeing machine. In 1907 it represented the most modern development in dyeing equipment.

Monel Metal was new then—and this was its first sizeable application in a dyehouse.

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Since then the dyeing industry has progressed far. And with each new development in processing or equipment Monel Metal has consistently demonstrated its ability to meet every modern requirement.

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It increases output, too. Monel absorbs no liquor. There's no boiling-out. Just a thorough rinsing, and the machine is ready for the next color.

Thus Monel Metal assures rapid changes of tint, fewer machines, less floor space, less dyestuff, and larger volume.

We have published two free booklets—"Technical Aspects of Silk Soaking" and "Modernizing the Dyehouse"... both full of practical information. We shall be glad to send them, or to answer any specific question regarding experience of Monel Metal users who have had problems similar to your own.

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Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

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Your textile chemical manufacturer can supply you with a wool scouring soap containing Yarmor Steam-distilled Pine Oil. This soap has these decided advantages:

1. It reduces the surface and interfacial tension of the scouring liquor.
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3. Mineral oils, greases, and foreign matter are loosened, held in suspension, and easily rinsed away.
4. The precipitation of insoluble calcium and magnesium soaps on the stock is prevented.
5. The result is *clean, soft, white* wool.
6. The danger of wool becoming rancid in storage is lessened.
7. Spinning, weaving, and finishing troubles are reduced.

Ask your textile chemical manufacturer about wool scouring soaps containing Yarmor.

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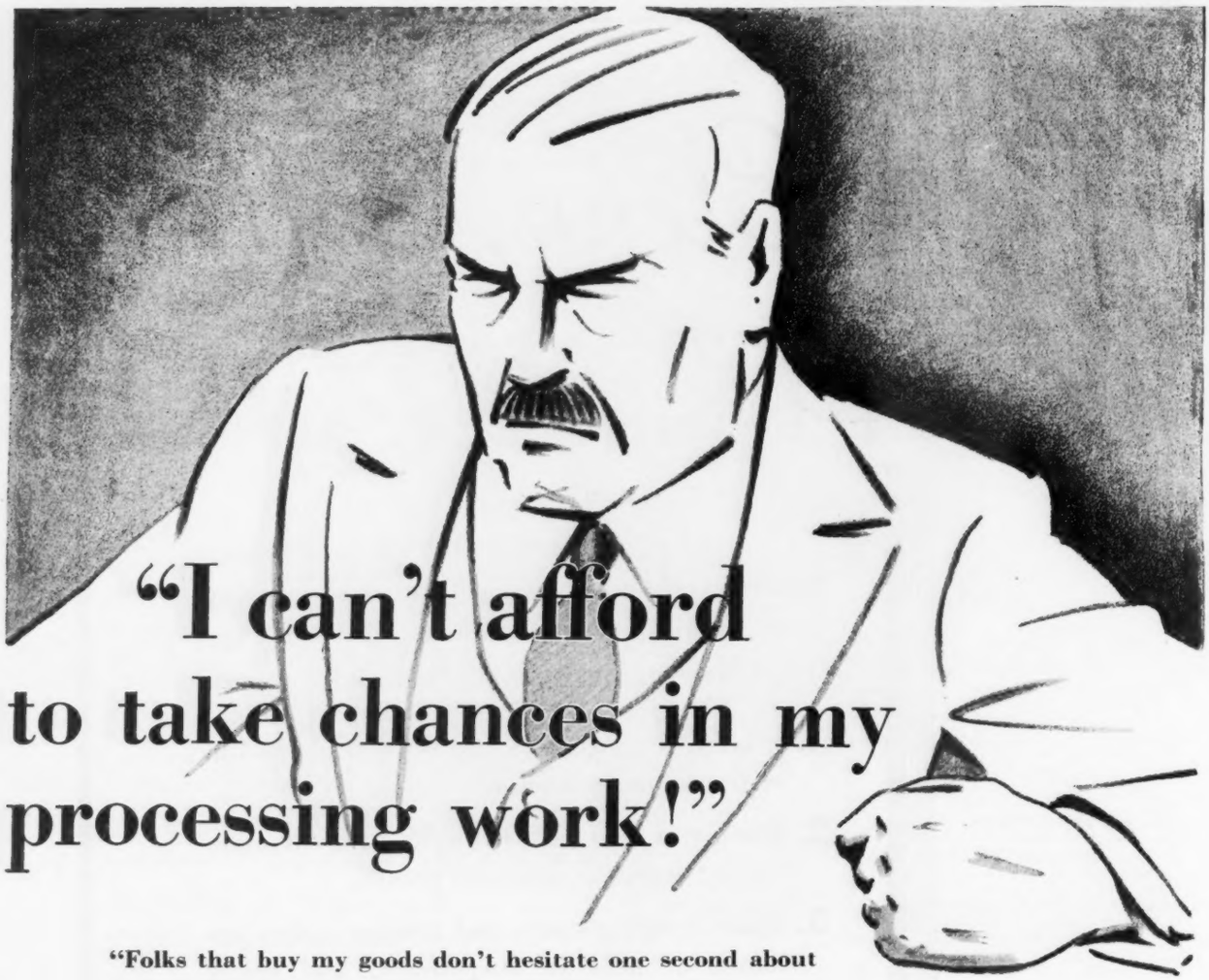

"I can't afford to take chances in my processing work!"

"Folks that buy my goods don't hesitate one second about firing them back to me if they don't think they're up to standard. Then we have to sell them over again at a loss and are minus a good customer when it's all over. I just can't afford to take chances in my processing work—because when it's done, it's done! The soaps I use must be right." • Armour's Textile Soaps, used for years with satisfaction by leading textile mills the country over, have proven their worth—a real safeguard in processing. • Armour and Company maintain a complete and practical chemical Research Department that is at all times at the call of Textile Manufacturers for rendering advice and suggestions. Just a note on your business letterhead will bring this service to you without obligation!

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2. Diastafor costs less than half as much as the original 1908 price.

Weigh these two strong points against other claims and we think you will decide that Diastafor is the most dependable and uniform product of its kind on the market.

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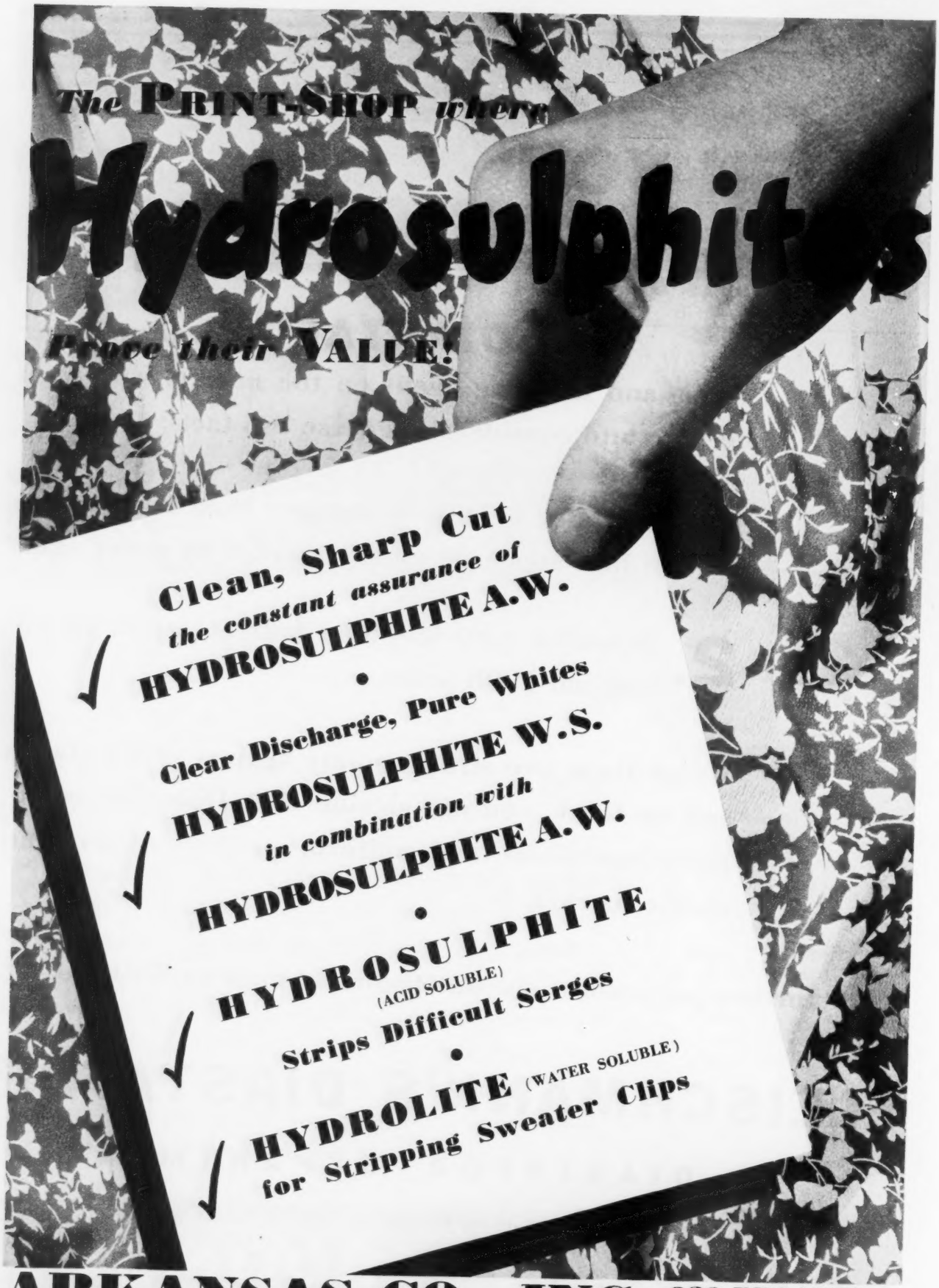

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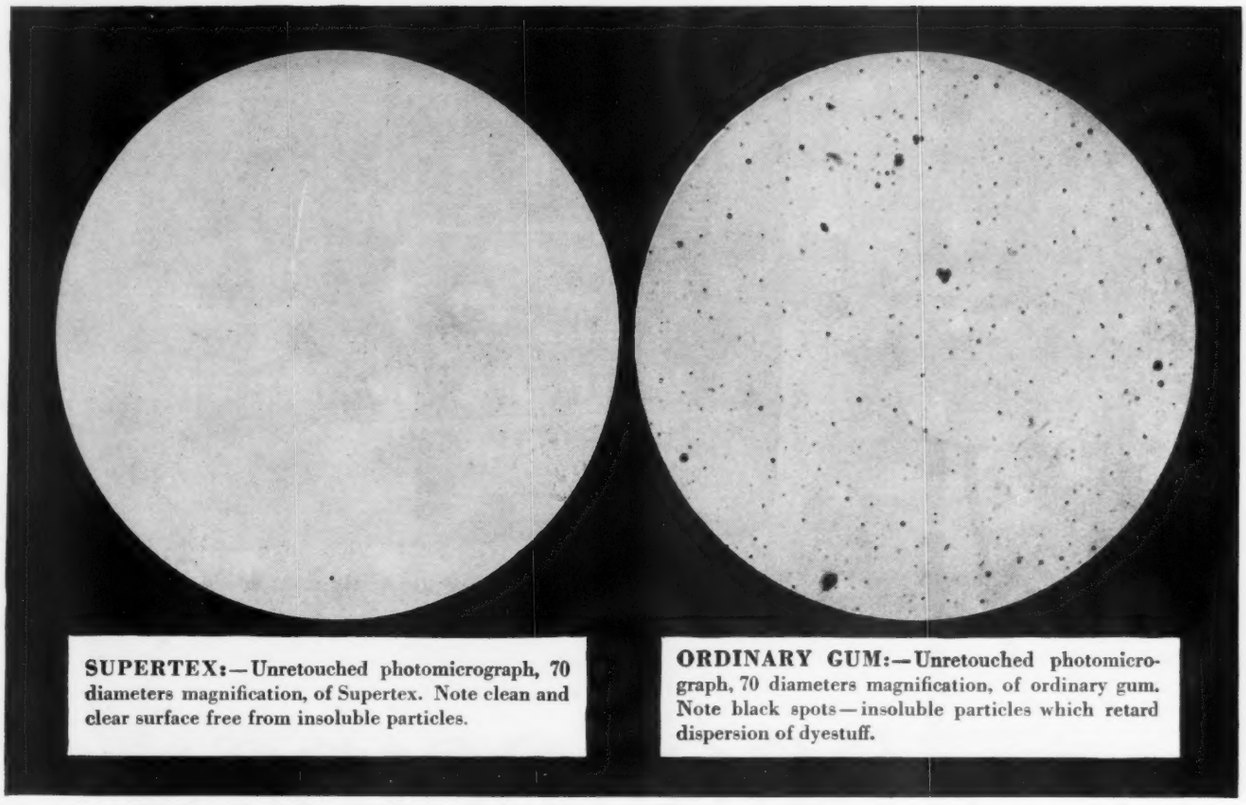

SUPERTEX:—Unretouched photomicrograph, 70 diameters magnification, of Supertex. Note clean and clear surface free from insoluble particles.

ORDINARY GUM:—Unretouched photomicrograph, 70 diameters magnification, of ordinary gum. Note black spots—insoluble particles which retard dispersion of dyestuff.

Here's why Supertex excels!

● The microscope tells the story—*Supertex and ordinary printing gums are manufactured from the same raw materials—but notice the difference. Our patented special process makes Supertex a *thoroughbred* printing gum—so purified and clarified that it suspends dyestuffs and hydrosulphites in a much more finely divided state.

Many printers are fooled by printing gums because certain important characteristics are not visible to the naked eye. They are readily seen under the microscope, particularly after adding a small amount of tint to intensify the denser particles. Supertex is absolutely clear, showing no solid particles, while the ordinary gum contains numerous insoluble materials which, in printing, filter out on the surface of the cloth as illustrated above.

All the impurities of the raw materials which are impossible to convert have been removed from Supertex, resulting in an evenly suspended solution. This feature assures better dispersion of the dyestuff or hydrosulphite, better penetration, and better dyeing of the fibres. These two photographs prove that doctor streaks and scratches on rollers are impossible with Supertex.

Use Supertex for rich, true colors, clear and well defined printing, and complete penetration.

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FREE—Write today for a free sample of Supertex for your own testing with any ordinary printing gum.

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A new achievement

by Waltham engineers that is

More than an Ordinary Counter!

Here is a new and improved resettable pick counter—a fair recorder. It will demand instant attention and respect of your weavers.

The wheel shown in red at the extreme right reads in hundreds of picks and is not reset with the remaining four wheels. Thus the weaver will be paid for any production up to 1000 picks for which he would not have been paid when operating with the ordinary resettable counter. (Note: The red wheel feature is optional at no extra charge. It may be shielded by the cover, unshielded, or omitted—entirely a matter of choice.)

The Waltham Pickometer is sold complete, down to the last nut and bolt, nothing extra to buy.

One piece main drive shaft. Steel parts, cadmium plated, sure protection against rust. Resetting key can only be removed when counter is in zero position.

Unconditionally guaranteed against defects in material and workmanship, backed by a reliable organization with eighty years of experience in the manufacture of precision instruments, in strict accord with its high standards of accuracy.

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Manufacturers of Precise, Accurate, Durable Instruments for 80 Years

WALTHAM PICKOMETERS

Vol. 98

COTTON

No. 3

March, 1934

W. R. C. SMITH, Publisher
T. W. McALLISTER, Editorial Director

ROBERT W. PHILIP, Editor

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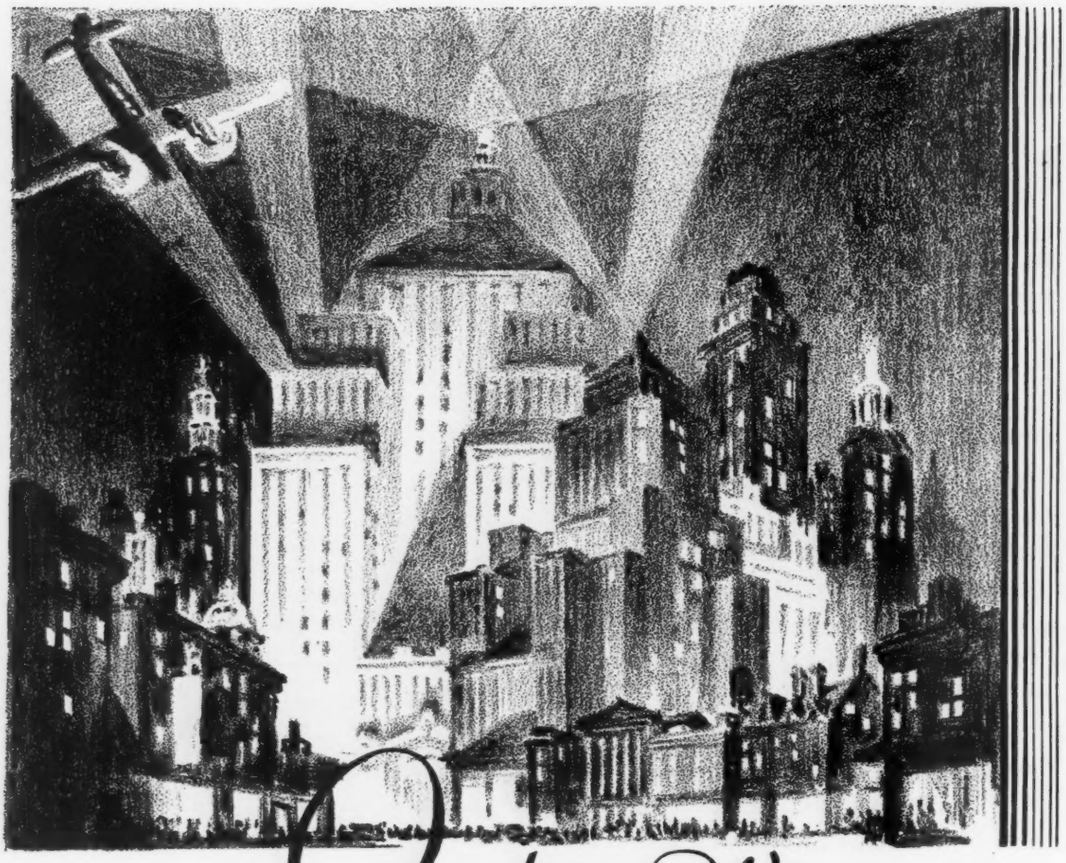

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in the QUEST *for* MARKETS

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COTTON

March,
1934

THIS THING OF HOUSING

By Marjorie A. Potwin, Ph. D.

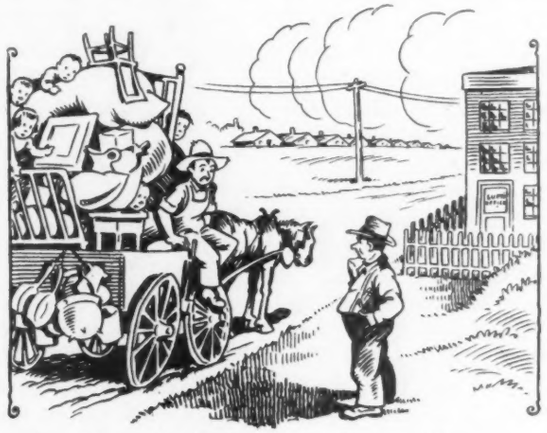
THIS article, with which Dr. Potwin returns to our columns, discusses, in the author's excellent style, a subject of vital, fundamental importance in the textile industry. It is made more pertinent by the current interest in the matter in connection with NRA, but is in itself of great significance.

This discussion approaches and covers the problem in an intelligent manner which reflects an intimate and sympathetic understanding point of view . . . . . .

THE old sway back drew up to the mill office. A dozen little faces peeped out from the quilts, split bottom chairs, wash pots and feather beds bulging from the wagon. Brakes creaked, reins were thrown, and Paw leisurely descended and started out to find the "Super". "We're here," announced Paw, as simply as a Lindbergh, *"and now, Cap'n, I want ye to git us up a house."*

If, at that historic moment years ago, Cap'n had had a flash, a preview of the magnitude and ramifications of the industrial housing that he was getting into, the chances are ten to nothing that he would have turned Paw down cold. "Land's cheap", he might have said, "get you a little acre nigh the mill and squat until you can do better."

But it simply wasn't in Cap'n's traditions as a southern land owner not to house his help, and it certainly was not in Paw's traditions as a cropper not to expect a house and with it a hundred beneficences, everything from easy credit at the store to naming the baby in the cradle.



"The old sway back drew up to the mill office" . .

Usually the prototype of the present southern cotton mill operative had no capital, if inclination, to build a home, but, often too, he had sold his farm to come to the mill and so had cash in hand. But Custom decreed that if you worked for a fellow surely he would look out for you. And it is Custom, too, which is accountable for the fact that "gittin' up a house" is such a personal gratuitous matter that it has never been regarded in any semblance of a business proposition. Cotton mill wages advance, but rents *never*.

It would seem only fair to say, "Prices are up. We've increased your wages. Maintenance is up. We'll have to raise the rent," but in cotton mill circles that is one of Those Things which simply aren't done. Custom taboos, and should any southern mill owner charge his employees the same rent that hundreds of cotton mill employees, living outside the village, willingly pay to a third party landlord, or should any southern mill owner charge his employees rent equal to 25 per cent of their income as rent is figured in the normal American household budget, such mill owner would indeed brand himself as hard-boiled, and set himself beyond the pale.

Naturally, each employer hesitates to act alone, and since southern cotton mills do not take concerted action on matters pertaining to wages, rents remain as they were years ago when a dollar a day or less was good wages. Is there, or should there be, a place for such a farce in modern business?

While it can be argued that if the mills had waited for other capital to launch housing projects necessary to manning the southern mills, they would still be waiting, there can be no argument about the fact that when Cap'n went to gittin' up houses, and then a church and then a school, and a store and this and that convenience, and ultimately garages and golf courses, he began to nurse a baby elephant that would soon grow white, overweight and omniverous.

And yet with its inherent sanctions the mill village has seemed so necessary and so desirable to both employer and employee that to question either the cost or the wisdom of it ranked of heresy—until most recently this was certainly the situation.

To be sure, many studies have been made of the cost of living in mill villages, but it was not until 1928 that mill treasurers began to scratch their heads over a questionnaire which, incident to other matters, brought out the fact that there is also a Cost of Villages. Perhaps, then, for the first time were brought together figures which, in addition to taxes, insurance and depreciation, included upkeep and interest on the investment in villages—"not only houses, but sidewalks, street lighting systems, water systems, sewerage systems, school buildings, Y. M. C. A. buildings, church buildings and all other facilities" erected by

Would employee home ownership better distribute the burden? . . . . . .

the employer for the use and comfort of his employees. Furthermore the subsidies paid to schools and churches were included, also the cost of medical supervision, athletics, recreation and other forms of social service, all of which have come to be a recognized part of the mill village system.

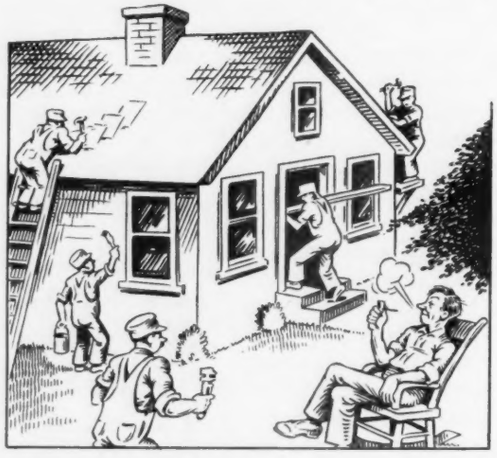
Anyone familiar with the mill villages themselves, and knowing some to be as bad as others are good, will not be surprised that such variations in standards are reflected in a cost range of from $75 to $300 per operative per year. Thus is the employer who provides his employees with good living conditions disadvantaged in selling his cloth in competition with the owner of cheap and shabby villages housing socially neglected employees. This differential has, of course, nothing to do with the sectional wage differential of one dollar set up in the textile code in favor of the southern mills as against the northern mills.

Perhaps the cost differentials existing among the mill villages can never be equalized as long as some human beings are fair and others selfish; while some employers feel an obligation to those who work in the mills as well as to those who invest in them; while some mills compete in an active labor market, and others monopolize employment in isolated places. Perhaps the differences in social and economic standards will be wiped out only when the mill village system itself is disposed of. And so it may be well indeed that after signing the cotton-textile code of fair competition, President Roosevelt ordered that, "It shall be one of the functions of the Planning and Fair Practice Agency provided for in Section 6 of the code to consider the question of plans for eventual employee ownership of homes in mill villages and submit to the Recovery Administration prior to January 1, 1934, its report in the matter."

One may surmise that this report may show that in a village of average size and conditions, the yearly loss in owning and operating such village to be approximately $150-$200 per operative, or for the 500 operatives living in it, a loss of $75,000 to $100,000 a year, not to mention the inescapable responsibility imposed by having to operate stores, public utilities, barbershops, laundries, community centers, baseball games, all day singings and whatnot, besides the nuisance of being called upon to dispose of, without disrupting the entire mill organization, the eternal annual jumble of whose chickens scratched up which seeds or which chickens scratched up whose seeds; or the annoyance of being expected to arbitrate and conciliate every now and then on whether them Jones rocked the Smiths, or the Browns killed old Miss Bryant's cat.

There is probably not a manufacturer who would not gladly dump the financial cost and the social weight of the mill village onto the shoulders of anyone who would assume it; particularly if the transfer could be made under some plan ringing with such ennobling words as "home ownership".

Home ownership! Aye, there's the rub! Who in the United States owns a home, anyway? Who wants to? In New York, the richest city in the world, one family in forty owns its home. In the eight south-



Mr. Tenant watches Old Man Maintenance work

eastern states 80 per cent of the farming is done by persons who do not own a shingle in the roofs over their heads. In the balmiest decade of all time, 1920-30, nearly 60 per cent of the people of the United States made their homes in rented quarters.

Behind these figures there is something more than financial inability to own a home. In the booming '20s clerks, wage earners, professional people and business men were buying stocks, bonds, annuities and luxuries without limit. Thousands of homes could have been bought had the desire for home ownership existed.

Pondering these facts I turned to get some first

hand reactions in the mill village to the suggested employee home ownership. "Surely, surely," I thought, "the mill people will rise above these distressing averages of American improvidence. Surely they will want home ownership and all the hall-marks of independence and thrift and good citizenship of which a deed is parent."

But even as I sallied forth to take my soundings from twenty-five sociological samples, misgivings echoed, "In no other way have you yet found the good people of the mills different from the American of Main Street. Why in this respect should they be different?"

Eight of the twenty-five employees whom I questioned said more or less convincingly, well, yes, they'd like to own a home but only if it was in the country to spend their old age in. Thirteen registered unqualified satisfaction with renting under present conditions and expressed themselves in no uncertain terms as to the advantages of being able to pull up stakes and move without encumbrance or delay. Two took the matter lightly. Oh, yeah, sure they'd love to buy a home. Sure, they'd buy the whole mill hill if the government aimed to keep up the taxes and insurance!

One family head told me that he already owned a good house just beyond the village limits. He was renting it, without lights or plumbing, to a fellow employee for $14 a month while he, himself, lived in the mill village, renting a company owned house with electric lights and bath for $2.40 a month. Good business man that he is, I find he is no isolated exception.

The choicest victim of my quest for reactions I found in one of those inopportune, though not uncommon moments, when Old Man Maintenance has taken rude and full possession. The mill painter was doing over the house, which pre-supposes that the mill carpenter was doing his part with a patch here and a plank there, while the mill plumber—oh, by all means the plumber—was adding his touch to the grand upheaval. All that the scene lacked was the mill electrician and the outside man and the scrubber, each booked to appear later.

"Quite a tidy little sum for this fun," thought I, though to the head of the house shifting around in the general commotion, I chirruped, "It's going to look awfully nice, Mr. Kuykendall. Wouldn't you like to own the place?"

His eye coldly appraised the company crew, not excluding myself. "Hell, no! . . . Excuse the language, Doctor, but you couldn't *give* me Georgia Home neither."

And so it is that in this day of broadcasts the mill villager may know something about something his own self! Maybe he has even heard that in Soviet Russia (and in swallowing a camel let us not strain at a gnat) the Soviet Oil Industry has replaced individual home ownership with modern American apartments "erected wholly at the cost of the industry and given rent free to its employees."

Certainly if the mill villager should pick up a copy of the Forum, November 1933, and run his eye over "The Fallacy of Home Owning", the chances to lift the burden of the mill village off the shoulders of the mill owners onto the backs of the mill operatives would go aglimmering and be forever lost, for the article convincingly reaches the conclusion that "it is a lot cheaper to pay a moderate rent and let the landlord pay the taxes and repairs and fire insurance and carry the other burdens and risks incident to ownership.

" . . . home owning is attended with unusual risks . . . it is a far greater gamble than almost any form of investment." The risks mentioned, change of business location, fire, illness, unemployment, accident, any of which may deprive the owner of his home, are the same for all, in or out of mill villages.

Aside from the risk of home ownership, does the American of today wish to be tied up to one hitching post or down to one place of occupation? Paying a substantial price to be anchored to a permanent architectural style in one circumscribed neighborhood somehow doesn't fit in with the American philosophy of freedom, change and motion.

Moreover, are we not quite satisfied to let our possession of a commodity terminate with our use of that commodity? Do we not actually enjoy the use of automobiles, ice-boxes, radios and a hundred other things the real ownership of which is never ours until we make the final payment just in time to discard the article in favor of a new model, for the use of which we cheerfully begin all over again what is in reality a continual process of renting?

Renting is no new habit of mankind nor a by-product of the machine age. In the cotton mill South we still consult the Bible with unquestioning reverence and read that even the apostle "Paul dwelt in his own hired house." Should such precedent be lightly set aside by a people who have found the night operation of mills condemned in John 9:4, or by folks ingenious enough to interpret Section 7 of the textile code according to the presence of the Blue Eagle in the New Testament? And how will Washington answer when it hears us singing, "Rent was good enough for Silas. It's good enough for me"?

While America, in or out of the mill village, may not want home ownership, it is quite likely that such home ownership, like the hickory switch and calomel and many other old-fashioned agents of discipline and regulation, may be good for America. Home owner-

ship might steady an otherwise irresponsible vote on such matters as bond issues and tax levies, and to increase the number of property holders in any given community might be to increase intelligent interest in legislation. Certainly it could do no harm to balance participation in public affairs with a proportionate share of their cost.

In innumerable ways it will be a happy day for the southern cotton mill owner when the proposed employee home ownership in mill villages becomes a reality. How happy or relieved the employee will be remains to be seen. In other ways he has never been, or wished to be, different from other people. Set apart as a home-owning American wage earner he *may* glory in the distinction.

This discussion follows the factual discussion of The Mill Village Problem, by a staff member, which appeared in December 1933 COTTON.

Other articles by Dr. Marjorie A. Potwin, which have discussed in these columns various phases of the southern labor situation, the village problem, etc., are: "Dynamite or Leaven", November 1929 COTTON; "The Faith That Is Within Us", January 1930 COTTON; "Not So Different", March 1930 COTTON; and "For Value Received", March 1931 COTTON. Reprints of these articles are available upon request.

Depreciation and Obsolescence . . . . .

A depreciation fund should be laid aside to be spent, not hoarded. . . .

EVERYTHING wears out in time—even mill machinery. Everybody knows this; it is not news, and every mill has its "Depreciation Account" to take care of wear, tear and obsolescence. But how frequently this "Depreciation Account" is nothing but a page or two in a ledger without a dime in the bank to back it up. Depreciation has been figured for tax purposes, but not for replacement purposes.

The moment a new mill is built and starts to run, it begins to depreciate, and the management might just as well begin to set aside some real cash for replacing or changing equipment when the times require this to be done.

A reserve fund set up for maintenance and replacement should be intelligently but liberally used. Well kept machinery returns good profits, while a too-fat sinking fund is always a temptation to hungry stockholders who would like an extra dividend. There are few persons with shorter memories than those who have cashed dividend checks, and it is a whole lot easier to put the money back into the mill while it is in the bank, subject to the treasurer's draft, than it is to get a bunch of stockholders, who have enjoyed huge returns for years, to dig down in their jeans and put some of these fat dividends back into the plant that earned them. There are literally hundreds of mills today that are in either poor or mediocre mechanical condition, but which have made enough money in their time, over and above a fair dividend to their stockholders, to have completely re-equipped the plant with new machinery.

It is to be hoped that the textile industry, after a long period of famine, is on the threshold of an era of plenty, and some common sense on the part of mill executives may prevent a recurrence of the mistake made in the flush days of fifteen years ago, when enormous cash and stock dividends were being recklessly passed out by mills whose machinery was creaking with age and crying out for replacement.

We were recently talking with a superintendent of a mill built twenty years ago, and at that time considered a model plant. This superintendent was complaining that the agent, the treasurer, and the directors all persisted in thinking of this plant as a "new mill", when in fact, it is an old mill. This mill has earned a tremendous amount of money, yet the superintendent cannot persuade his superiors to buy some of the things that he must have to keep abreast of the times. This idea seems to be more or less typical of the textile industry. Mills twenty to thirty years old are regarded by their owners as "practically new plants".

The application of depreciation funds to replacement does not mean that everything should be heaved out of the window and new machinery bought at regular intervals, but it does mean that after money has been saved to put back into the plant, that it should be put there and put where it will do the most good. In some cases the money should be spent for new equipment, and in other cases for modernizing old equipment. High speed spooling and warping systems, automatic looms, and long draft spinning are examples of advances in manufacturing practice which require the complete replacement of equipment. The heavier machinery in a cotton mill, such as cards, pickers, opening machines, and slashers will, if properly cared for, last almost indefinitely, but all of these machines do require constant attention and frequent overhauling to keep them in the best of condition.

Auxiliary services, such as power generating and transmission equipment, as well as the buildings themselves, the roof, the floor, humidifying and lighting systems, etc., all eventually will demand repair and replacement.

Running any manufacturing enterprise is a constant battle to keep abreast or ahead of obsolescence, and while mill machinery has a lower depreciation rate than most kinds of machinery, it is fatal for the mill management to take the attitude that the machinery will probably last as long as they will, and then somebody else can worry about it. A great many mills seem to have operated on this basis in the past, and it has not been a healthy thing for the textile industry.

Some Helpful Aids for Use in the Slasher Room

THE slasher room has been referred to as the "bottle neck" of the mill*, and this of course is true in a sense, as all warp has to pass this way, and in the warp lies the success or failure of many weave rooms. To do good work every one must admit that the duties of the operative must be considered. It is too often the case that the slasher man is called on to do good work, keep down waste, keep his work clean, and yet is provided with little or no operating advantages that will help him to do these things. The purpose of this brief discussion is to try to give COTTON'S readers in a very practical way some of the things which we have tried and found to be of great help in the slasher room of one of the largest southern mills.

In the operation of a slasher, there is no one thing that is more back-breaking or reduces the efficiency of the operative more than the constant raising and lowering of the beam presser roll weight. When the slasher is slowed down this often has to be done. This is also necessary on the doff of each beam.

In Fig. 1 is shown a pedal which is bolted to the square cross beam just under the presser roll. The

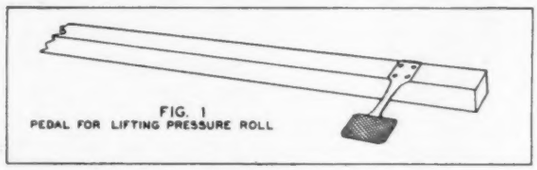


FIG. 1
PEDAL FOR LIFTING PRESSURE ROLL

weight lever is attached to this beam, but by the use of this pedal the weight can be raised or lowered with ease by the use of the right foot. The use of this pedal also enables the operative to regulate the friction, place the presser roll for the new beam, and other things, at the same time he is raising or lowering the weight.

Another novel attachment which has been successfully used in some mills, where it is difficult to regulate the friction on the back beams in the slasher creel, is shown in Fig. 2. The slasher man is called upon to keep the friction ropes right and not to have so much waste at the back of the slasher. Most of this waste comes on the two back beams in the set, because they usually run out longer. This is caused mainly because when the machine is stopped or slowed down, the beams "run over" as it is commonly called. The attachment described is so arranged that when the machine is in operation there is no weight at all on the last two beams as shown, but as the machine is slowed down the rope is gradually pulled tighter and tighter. When it is in standing position there is a snug friction on the beam. The large spring

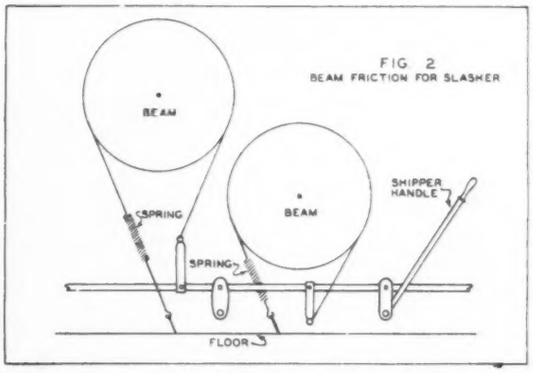


FIG. 2
BEAM FRICTION FOR SLASHER

shown attached to the other end of the rope causes the friction to adjust itself gradually instead of abruptly. The other end of the spring is fastened to the floor by means of a hook.

Many a good slasher man has worn himself out at the end of his day's work lifting his squeeze rolls. The rolls are heavy and usually a piece of pipe has to be used over the spindle of the roll to lift it from its normal position to the stand where it rests over night. The writer has had several accidents in the plant caused from burns due to the operator getting his arm against some hot steam pipe or hot size box, while attempting to raise the squeeze rolls. The simple lever and stand shown in Fig. 3 does the work. The

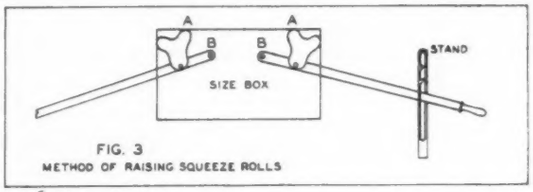


FIG. 3
METHOD OF RAISING SQUEEZE ROLLS

end of the lever is fastened to the size box at *B*. To raise the roll, place *A* under the spindle of the squeeze roll and raise the lever by means of the handle until it becomes engaged in the notch in the stand. The other end of the roll is raised in exactly the same manner. By the use of this attachment one end of the roll can be lifted with one finger, and because of the shape of *A* the spindle cannot slip out and allow the roll to fall.

The writer hopes that the simple and practical devices explained here will be tried out by others, because they have proven so helpful at our plant. It naturally follows that if the slasher man's job is made easier for him he can do better, more efficient work, and the mill benefits as a result.

*See also article "Controlling Stretch on Slashers," page 40, December 1933 COTTON. Clippings of this article will be furnished upon request.—The Editor.

Mill Management Notes

The December 1933 issue, page 43, carried some of these mill management notes from the author, who says they are observations from his experience in purchasing, costing, and assisting in management, for cotton mills that are among the best in the land. We feel you will be interested in these short, pertinent comments. Are you?—The Editor.

"Of All Things"—We Purchase

The extent and variety of purchases by textile plants provide business for other industries in America amounting, certainly, to a billion dollars annually. Textiles' low ebb has stagnated many other lines, and textiles' present rise is bringing back up the grade many thousands of machine shops, chemical factories, and wood-working plants. Besides the basic raw materials from the cotton and wool farmers, the iron and steel mills, the dye factories, and the box builders, here are, for instance, a few specialties that are bought in considerable quantities, as reported by one cotton yarn mill:

Acetic acid, acetylene gas, alcohol, alum, alemite fittings, ammonia, bath tubs, batteries, machinists' files, propane gas, gum arabic, glycerine, lard oil, mineral spirits, oxygen, electric ranges, shellac, stockings for dye springs, tri-sodium-phosphate, and waxes.

A list from the same mill's purchase file shows more or less demand, at time, for absorbents, aspirin, automobiles, atomizers, axes, baseballs, bottles, garbage cans, cement, chlorine, water coolers, crayons, desks, calculating machines, drag scrapes, exterminators, fertilizers, hoists, air, garden and water hose, hygrometers, ink of six kinds, medicines, lawn mowers, paints of thirteen kinds, paper of nine kinds, periodicals, petrolatum, photos, plows, floor polish, pumice stone, putty of three kinds, quicksilver, hose reels, sewing machines, seeds, sienna, skins, sodium fluoride, stoves, tennis nets, thread, vacuum pumps, wall-board, and wheel-barrows.

* * *

On Acknowledging Orders

As a purchasing agent I have been interested in noticing the differences in methods that suppliers have, of treating orders received in the mail. It is pleasing to the buyer to receive acknowledgment of an order that cannot be filled immediately, and to have the supplier say just when shipment may be expected. It is a satisfaction, also, to be told at once of any error in the stated price or terms. This enables the auditor to be ready to check the invoice promptly when it is received, and to pay without delay. We, as sellers of textile goods, can learn lessons from our experience in buying supplies, by assuming that our own reactions to lack of service (or courtesy) are probably the reactions of our own customers when their requests are ignored.

* * *

Using Technical Training

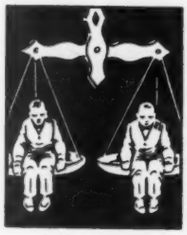
A fine cotton yarn mill that works closely to quality standards has taken into the organization from time to time several men from textile schools, in an endeavor to use their knowledge of technique and to train them for future positions of authority. This plan has been only partially successful. One of the men thus acquired has shown marked ability, technically, and at the same time has applied himself diligently in the building up of system and records and routine. Another man acquired from the same school has done a little work of value, but lacked the initiative and the force to succeed. The chief lack, however, in both, was the ability to get along well with the workers. Men who have grown up in the mills become good overseers after having been through all the hardships of day labor, and having seen for themselves what kind of an attitude toward the workers the overseer must have to keep them friendly, willing and loyal. But the technical man seems to depend too much on his technique, and to give too little attention to the workers' point of view. It is true, however, that there is a movement on foot right now, through the Educational Survey of the Textile Foundation, in Washington, to broaden the scope of the textile manufacturing courses. Probably, therefore, in the future, there will be more of the textile school graduates who have been trained in the management of men. In the meantime, the best prepared of these graduates, for promotion in the mills, are to be found among those who have been day workers as well. Even among these, qualities of personality are not easily discernible on first acquaintance, and the mill manager has to try out one and then another before finally lifting to a position of oversight of a large group of men or women a youth who has even the very best of educational background.

* * *

Which Would You Choose?

A textile mill operator asks how he should go about picking a master mechanic for a new mill he is building. The mill is to be driven with electric power supplied from a hydro-electric plant on a nearby river. The machinery is to be driven with individual motors and in groups—the spinning being a two-frame drive. There is one boiler for heating and processing. I told this operator how I picked a man for a similar job and got good results. I went down to the state school of engineering and looked over the seniors in mechanical and electrical courses. It was in the spring, near the

close of the session. I learned from the head of the school where each man came from, and what had been his work before college. I found that one of them had grown up near a large textile mill, and being mechanically inclined, had earned his college money by means of working as a helper in machinery erection, in shop repairs, in cleaning of motors, oiling spinning, testing speeds, and even in doing some carpentering.



He had the groundwork experience of several years, on which to build with a technical education, and he had now taken courses in mechanical and electrical engineering at the state school. I found another man of similar background and education. Then there was the choice to be made between these two. One of them, I found, had shown some qualities of leadership as a baseball captain. The other was a more serious student, and made the higher class marks. I ask you—how would you decide? I took the same man that you would have chosen. And he made good.

* * *

Buying and Storing Coal

It is difficult to save money in coal purchasing unless there is plenty of storage capacity at the mill for

all or most of a winter's supply. The difference between the summer and the winter prices runs from 50 cents to nearly a dollar a ton. Multiply this by the number of tons bought during the months from October to March, and the result will show a considerable annual loss—or saving. This is a point in plant designing sometimes overlooked.

* * *

Women Overseers

I read of a mill in Tennessee recently that has a woman for spinning overseer. That set me to wondering why there is not more general recognition of the abilities of the women in the mills, for leadership and supervision. Since they are wearing overalls instead of skirts, these smart women can get around the machines and handle tools when necessary. Let's teach them and give them a chance. It will give all the women an incentive to stay on the job and work for promotion, and for more pay.

Sloan's Report on Results Under Cotton-Textile Code

At a meeting of the Cotton Textile Code Authority held in Washington, February 1, 1934, George A. Sloan, chairman, made a report showing beneficial results to the industry under its NRA code.

Sales of cotton goods during the first three weeks of January, to January 20, exceeded production by 200 million yards, or 60 per cent.

Unfilled orders are at the highest point since the code became effective on July 17, 1933, amounting to 847 million yards. This is an increase of 175 million yards since the beginning of December. Present unfilled orders amount to seven weeks' current production which is a better situation than at the high point reached in 1929.

Total stocks in mill hands on January 20 amounted to 523 million yards. There has been a decrease of eight per cent during the last five weeks. One-half of the total stocks on hand consists of goods that are unsold, the remainder being unshipped goods earmarked for delivery against unfilled orders.

Production for the week ended January 20 amounted to 116 million yards. December weekly average production, when the industry-wide machine hour limitation was in effect, was 87 million yards, in November 111 million and in October 114 million.

Whereas there were 320,000 persons employed in the cotton manufacturing industry in March, 1933, the number increased to 408,000 in June, 460,000 in August and 456,000 in October.

Due largely to the limitations on labor and machine hours effective under its code, the industry is today employing more people than in 1926.

The average wage per hour per employee increased 70 per cent between May, when the code was being formulated, and October, 1933, the last month for which figures are available.

The average weekly earnings for a 40-hour week under the code were 27 per cent higher in October, 1933, than for a 54-hour week in May.

* * *

Egypt Increasing Production of Shorter Staple Cotton

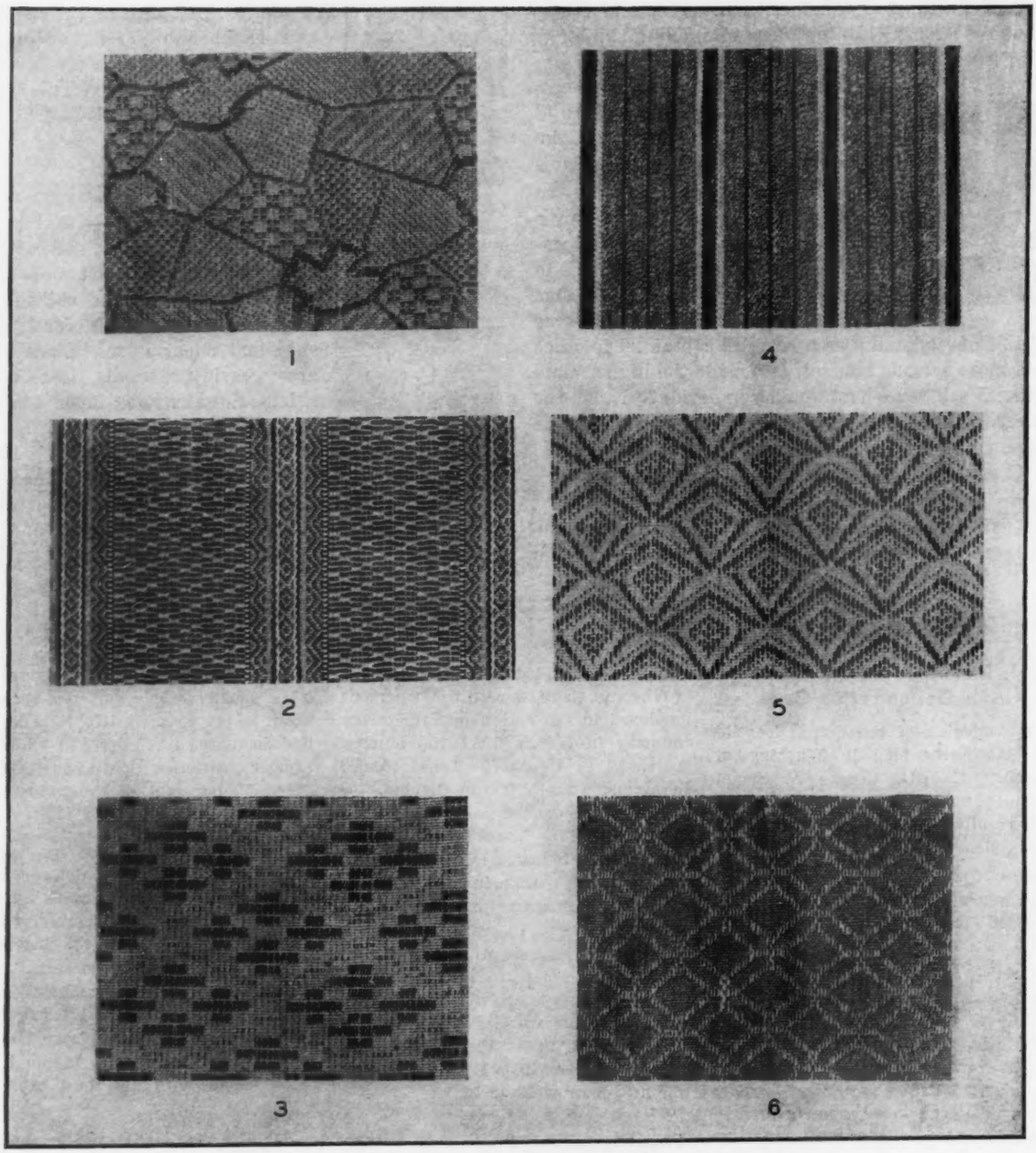
Efforts to shorten the staple length of cotton produced in Egypt are more significant in point of competition with American grown cotton than the possibility of acreage expansion in Egypt, P. K. Norris, Bureau of Agricultural Economics marketing specialist told Southern agricultural workers in conference at Memphis, Tennessee, recently.

"The present trend in Egypt is toward a shorter staple," Mr. Norris said. "In 1922 Sakellarides and other long staple varieties of cotton occupied about 75 per cent of the total cotton area while Ashmouni and Zagora and other shorter staple varieties occupied about 25 per cent. By 1932 Sakellarides had decreased to 43 per cent while the shorter varieties had increased to about 50 per cent of the total cotton area.

"For several years past," he continued, "there has been a definite abandonment of the longer staple varieties and an increase in the shorter and medium staples. It is possible that in the future as much as 80 per cent of the Egyptian crop will range between $1\frac{1}{8}$ and $1\frac{3}{16}$ inch staple. With average crops this would mean from 1,000,000 to 1,500,000 bales of a staple length comparable with the best American staple."

Mr. Norris' statements were based upon a personal study of cotton production and marketing in Egypt in 1930 to 1933 when he inspected the leading producing areas and conferred with agricultural officials regarding future plans for cotton growing in Egypt. He told the southern agricultural workers at the Memphis conference that "the productive area of Egypt is limited to the Valley and Delta of the River Nile. This includes about 8,500,000 acres, of which a little more than 2,850,000 acres are low, marshy swamps, canals, highways, railroads, cities and towns, leaving about 5,650,000 acres of farming land.

Automobile Seat Cover Designs



Six varied patterns for automobile seat cover designs . . . . . .

By Thomas Nelson, Dean, North Carolina State College Textile School

SEAT COVERS for automobiles are now being used extensively and are made in a large variety of patterns and colors. There are also various grades in quality. The cheaper grades are usually made from single yarns both in warp and filling, the better grades from ply yarns. Both dobby and Jacquard looms are used for the production of these fabrics.

In making these fabrics certain fundamental principles should be observed.

First: Yarns should be fast-dyed. This is necessary because of the use to which they are put. If a person with a wet garment, for example, should sit on a seat covered with a fabric in which the colors bleed, the result will not be satisfactory, to say the least.

Second: Fabrics should be firmly constructed. If

the yarns are suitable, a good firm and durable fabric can be made by using the plain weave for the ground, or in other words, a good well-constructed plain fabric will be serviceable.

To make such plain fabrics more attractive they are woven in colors and also embellished by having figures made from extra warp threads superimposed on the face of the fabric. Care must be taken so as not to have the floats of the extra threads too long or the wearing quality will be considerably reduced.

It is an axiom in weaving and designing fabrics that the closer woven a fabric is made, the better will be the wearing qualities, but a fabric with large floats of warp or filling will be reduced in wearing quality in proportion to the floats. Of course, the material used will have some influence on this.

Fig. 1 illustrates a Jacquard-woven fabric made from ply yarns in both warp and filling. This is a very good firm fabric, the construction being somewhat as follows: ground ends per inch 74; figure ends per inch 37; picks per inch 40. Warp number, ground and figure 26s/2; filling 20s/2. Ends arranged 2 ground, 1 figure. The ground fabric is plain, the embellished effect being made on the Jacquard.

Fig. 2 illustrates another exceptionally well-built fabric made from ply yarns and woven on the dobby loom. The number of yarns used is the same as in Fig. 1. The ground of the fabric has a rib effect with 90 ends per inch, these being arranged 1 light brown, 1 dark brown, 40 picks per inch.

Fig. 3 illustrates a fabric made from ply yarns in warp, and single filling, woven on a dobby loom. The construction of this fabric is as follows: ground ends per inch 64; figure ends per inch 33. Warp number, ground and figure 26s/2; filling 8s/1. Ends arranged in fabric 2 ground, 1 figure. The colors of yarns in figure are 1 green, 1 black. The ground of the fabric is plain with the dobby pattern superimposed on the face.

A cheaper fabric made entirely from single yarns is illustrated at Fig. 4. The construction of this fabric is as follows: ends per inch 56; picks per inch 37. Warp number 10.5s; filling, 9s. The warp dressing being 4 ends white, 8 ends blue, 4 ends white, 12 ends brown and white mock twist, 2 ends blue, 3 times; then 12 ends brown and white mock twist.

A somewhat heavier and coarser fabric is illustrated at Fig. 5. Both warps used are ply yarns and the filling single, the construction being as follows: ground ends per inch 44; figure ends per inch 22; picks per inch 32. Warp number, ground 20s/2, figure 16s/2. Filling 10s/1.

Fig. 6 illustrates another pattern from this construction.

All fabrics illustrated have the plain fabric as the base. Lines of three or more samples can very easily be made by substituting different colors of warp threads used for embellishing the fabrics.

'Phite, 'Phate and 'Phide

By Andrew J. Kelly

THE nomenclature applied to certain sodium salts (much used in the textile and allied industries) is a source of annoyance and of confusion. This statement applies in particular to these six:

Sodium Bisulphite
Sodium Hydrosulphide
Sodium Hydrosulphite
Sodium Hyposulphite
Sodium Hypochlorite
Sodium Thiosulphate

As a source of reference, and for general information, formulas and specific data for each of these chemicals is listed below:

Sodium Bisulphite (or Sodium Acid Sulphite): $NaHSO_3$. An energetic bleaching agent for wool. Evolves sulphur dioxide (SO_2) on heating; with dilute acid will emit all its sulphur as SO_2. The Bisulphite is an active antichlor for vegetable fibers after chlorine bleach. Evaporation of hot concentrated Sodium Bisulphite solution results in the separation of a crystalline mass of pyrosulphite.

Sodium Hydrosulphide: NaHS. This salt is little used but its name is apt to confuse. It is decomposed, on boiling, to form sodium sulphide and hydrogen sulphide: $2NaHS = Na_2S$ plus H_2S.

Sodium Hydrosulphite: $Na_2S_2O_4$. This is a salt of hydrosulphurous acid ($H_2S_2O_4$) and its correct name, according to systematic chemistry, is sodium hyposulphite; this name, however, was first given to the quite different sodium thiosulphate (q.v.). Sodium Hydrosulphite is an energetic reducing agent, and is heavily used in the application of reduction vat colors and in stripping. Freshly prepared solutions have the greatest reducing power—after an hour three-fourths of the hydrosulphite (which has a neutral reaction) is transformed into bisulphite (with an acid reaction):

$$Na_2S_2O_4 + O + H_2O = 2NaHSO_3$$

Sodium Hyposulphite: See Sodium Hydrosulphite and Sodium Thiosulphate.

Sodium Hypochlorite: NaOCl: The hypochlorites are powerful bleaching and oxidizing agents. The mill bleaching liquor made by passing chlorine gas into a cold solution of caustic soda (sodium hydroxide) forms Sodium Hypochlorite:

$$2Cl + 2NaOH = NaCl + H_2O + NaOCl$$

Bleaching powder is Calcium Hypochlorite.

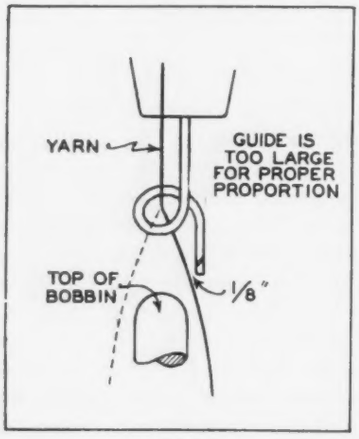
Sodium Thiosulphate: $Na_2S_2O_3$. This Salt is incorrectly called sodium hyposulphite; it is the "Hypo" of the photographers and is used by them as a fixing agent. Sodium Thiosulphate is a strong reducing agent; it transforms free chlorine, bromine, or iodine into the corresponding halides. In this respect it finds occasional use as an antichlor.

The Scavenger Roll

SOME readers feel that, due to the name of this department, it is devoted entirely to spinning. This is not the case, because its purpose is to pick up ideas on any and all departments in the mill, from this mill and that, and deposit them here for you. The name derives from the similarity of this function and the purpose of the scavenger roll. Reprints of several of the previous installments are available upon request. We welcome suggested topics for next month . . . .

Using the Pig-tail

We were impressed not long ago by bumping into one of the "little things" that had gotten by us all these years. It was shown to us by a venerable superintendent with a keen eye. Most of us think of the kink-catcher on the end of the pigtail or thread guide wire on the spinning frame as nothing more than a kink-catcher. This man makes better use of this device. This part of the guide wire is set ⅛-inch from the



balloon of the yarn when the rail is at the bottom and the balloon at its greatest. When a slub or gout gets into the yarn the larger balloon it causes throws the yarn around the wire and into the kink-catcher and down comes the end. See sketch.

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Re: Filling Wind for Barber-Colman

In the January issue (page 26) we gave the details of the filling wind used by a certain mill for Barber-Colman spooling. This has elicited queries from several mills, the general nature of these inquiries being similar to that of the gangster leader, who viewing the enormous crowd at the first football game he attended, and seeing therein great possibilities for racketeering, turned to one of his lieutenants and asked, "Why ain't I been told about this before?"

The January item states that the yardage on the filling wound bobbin referred to is 2,640. (The yarn number, 30s, the ring size, 1¾-inch, the bare bobbin, ⅞-inch, the length of taper on the package, 2-inch.) This amount of yardage, as we see it, is the "nigger in the woodpile". By reference to the spinning data on print cloth numbers published in COTTON (June, 1933 issue) it is found that this yardage of 2,640 is from 400 to 900 yards short of the package obtained by other mills with the same ring, bobbin, and traverse dimensions, on warp and combination winds. In most mills such a reduction in the size of the warp package would result in increased spooling costs, as well as increased doffing costs and loss of production.

Which brings up the question: Is it better to stay on filling wind, even with reduced yardage on the bobbin, to get the advantages of better running work, higher speed, less ballooning, etc., that are claimed for filling wind over warp and combination winds? Once upon a time we changed a carded yarn mill on 40s and 50s from warp to filling wind. This was done to get improved spooling, on what is now known as the "old system" of spooling, but we expected advantages in the spinning room also. We were disappointed in this, and until we have conclusive experience or proof to the contrary we base upon that one trial our opinion that the advantages of filling wind over warp wind are negligible so far as the spinning room is concerned.

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Detecting Devices

In some tirecord mills using beam creels a clever system of drop-wires is used to prevent drop-plies in the cord. Each end from the beam runs through a drop-wire eye that is electrically connected to a signal light and a sound signal. Should an end break the twister tender's attention is attracted by the signal and he can repair the break before many yards of the "singling" or drop-ply has been run.

One mill has applied a similar device to the looms. The signal light is attached to the arch of the loom, in full view, and is wired to a trip switch which is operated by the action of the loom brake. When a loom stops the light stays on until the operative starts the loom again. Each weaver runs 120 looms in this room. Where the looms are equipped with electrical stop motions the size of the generator used for the stop motions was increased to take care of the signal lights. A small generator was installed to operate the lights on the looms having mechanical stop motions. It seems that such a system of "flagging" looms that have stopped would save much lost time, production, and work, especially where a weaver runs a goodly number of looms.

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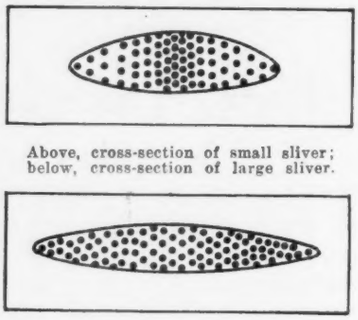
More About Trumpet Holes

We have the following comment from a reader: "In reading your Scavenger Roll in the January issue (page 26, January COTTON) I have read with interest the article in connection with trumpet holes, and would say for your information that this constant unfortunately changes for every different type of cotton; that is, where one constant would apply to a long, fine staple cotton it will not be applicable where one is operated on a short, coarse fiber".

Which leaves us still very much at sea regarding this matter of proper condensation of slivers by trumpets, but which gives us the opportunity of expressing a pet theory in this connection on which we would appreciate further checks by readers. We believe a trumpet should not condense the sliver more than necessary to give the sliver sufficient strength to eliminate stretching at the next process. We take, therefore, little stock in the idea that small trumpet bores should be used to stop the passage of lumps, heavy slivers, etc. This should be taken care of by careful methods of creeling, cleaning, picking clearers, etc. And



Above, cross-section of small sliver; below, cross-section of large sliver.

we feel the large, bulky sliver will give better drafting at the next process because all the fibers in the sliver will have a better chance of being controlled by the rolls. In the accompanying sketch we try to explain the reason for this opinion. We would certainly like to hear from other readers more about this interesting subject.

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"Once there were two old maids—"

This matter of finding something one is not looking for reminds us of the story of the two old maids on a vacation trip in the Valley of Virginia. Being very cautious they would always locate the fire-escape before retiring. One night one of the ladies was going up and down the halls of a certain inn looking for the safety exit when she pushed open one door and beheld a man taking a shower bath. Greatly agitated and confused she said, "Oh, excuse me, I was looking for the fire-escape", and turned and ran down the hall as fast as she could. Hearing a noise behind her she turned and beheld once again the man from the shower room, a towel draped around him, who excitedly inquired, "Where's the fire?"

Miscellaneous Materials Used in Finishing Cotton Piece Goods

By J. Andrew Clark

Chief Chemist, Dutchess Bleachery, Inc.

THIS installment in the series by Mr. Clark begins the conclusion of his discussion of the basic raw materials used in finishing cotton piece goods. The more generally used products have been treated in previous installments. (See page 47.) Here begins a discussion of the miscellaneous materials, including tinting materials, glues and gelatines, casein, rosin, water-proofing materials, etc. . . . . .

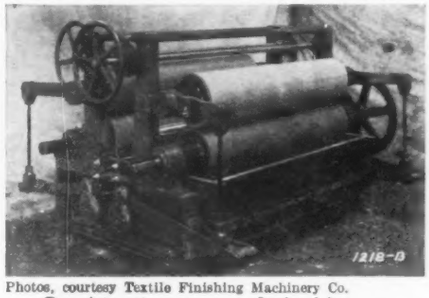
WHILE tinting is often considered synonymous to blueing, finishes are frequently required to tint cloth other than white, cream being a very common tint. The color of even the best bleached cloth is rarely satisfactory as a pure white and is commonly tinted with blue to neutralize the slight residual buff or orange shade which then results in a brighter and whiter fabric. This is based on the fact that complementary colors neutralize each other to produce grey, which in this case, is so little that no perceptible darkening of the cloth results. In the case of poorly bottomed or incompletely bleached cloth, sufficient grey may, however, be produced in neutralizing the color of the cloth as to result in a dirty, dark and slate-like color. The exact neutralization of the cotton color is slightly exceeded as a rule in practice to give a slight excess of blue, the amount of which is regulated by the converter's demand.

Tinting Materials

A variety of tinting materials are available since both pigments and soluble dyes are suitable for this purpose. Of the pigments, Ultramarine, Prussian Blue, Indanthrene Blue and Indigo are the more commonly used. The soluble acid, direct and basic colors are also occasionally used for special purposes. The finisher is guided in his choice by the nature of the finishing mix, whether it is slightly acid or alkaline, as well as whether the cloth is finished from an acid or alkaline solution before washing and water mangling. Considerations of fastness also influence the choice of tinting materials. Cloth tinted with Indanthrene Blue for instance shows no yellowing when exposed in the Fade-Ometer for 24 hours, while another piece of cloth tinted with an acid blue to appear similar to the first fabric entirely lost the effect of the tinting during the same exposure.

Ultramarine Blue—Method of Manufacture

Ultramarine Blue of commerce is today a manufactured pigment obtained by the formation of a double salt of aluminum and sodium silicate with sodium sulphide, although formerly the natural mineral, lapis lazuli, was powdered and used for this color. The small quantity available and the cost of preparation, however, prevented the general use of the natural product except for artists' paint. Two general methods are employed in the preparation of this material, the first of which consists of sintering a mixture of anhydrous sodium sulphate, kaolin and charcoal or rosin in air tight muffle furnaces to form a green ultramarine. This is then ignited with powdered sulphur to form the crude blue pigment, which after leaching with water to remove soluble salts, is dried and ground. The second method yields the blue ultramarine directly and is ordinarily run in large muffle furnaces. The charge consists of two and one-half tons of finely ground soda ash, china clay, charcoal and sulphur spread approximately a foot thick on the floor of the muffle, which is then covered with tiles and sealed with fire clay to prevent access of air, and slowly heated to 700 degrees C. Time of heating is controlled by observing the color of samples withdrawn periodically and generally takes about three weeks before the charge can be withdrawn. The product, after cooling, is separated into two layers, the top being a bright blue, while the bottom layer is somewhat green.



Photos, courtesy Textile Finishing Machinery Co.

Combination type of double mangle for starching and bluing . . .

Ultramarine and Prussian Blue—Their Characteristics and Uses

Ultramarine blue is insoluble in water and its suspensions will settle out completely in a few hours, depending on its fineness. Various lots of ultramarine differ slightly in color depending on slight

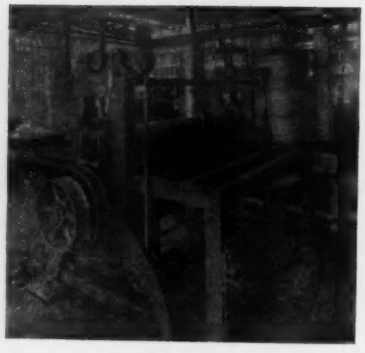
differences in composition and fineness. This latter property, moreover, is intimately associated with covering power and can be roughly estimated by comparison of its settling rate in water compared to a known standard. This color is very fast to light and mild alkalies, but turns reddish with traces of chlorine and is entirely destroyed by dilute acids. Strong alkalies, however, affect it also, ammonia in rosin size and even the alkalinity of soap softeners in the presence of reducing compounds is sufficient to change this color when standing hot for any length of time. It is, therefore, used in neutral or slightly alkaline mixes or if used in blue water, should be used only with cloth finished neutral or slightly alkaline and entirely free from traces of chlorine. Ultramarines of somewhat better fastness to acid have been made by increasing the amount of silicates in the mix, during manufacture. These blues reach the market as a bright blue powder and can be added directly to the mix by the finisher after first suspending in water.

Prussian Blue is ferric ferrocyanide and is obtained by the reaction of ferric salts with potassium ferrocyanide. A dilute solution of ferrous sulphate, acidified with sulphuric acid is mixed with potassium ferrocyanide. The precipitated white ferrous ferrocyanide, after decanting of the supernatant liquor, is oxidized by nitric or hypochlorous acid to yield the blue product.

The manner of preparation affects the product considerably, the so-called soluble Prussian Blue being obtained by pouring the iron solution as a slow stream into an excess of ferrocyanide.

This color is not altogether fast to light and in packing, changes somewhat green. Light tints also are quite green, which necessitates shading with colors such as saffranine or others to neutralize the green hue. Prussian Blue is considered, however, to have greater tinctorial strength, and to be somewhat brighter than Ultramarine. It is, moreover, fast to acids and is practically unaffected by traces of chlorine, although entirely unsuited for use with even traces of alkali. Dilute alkali decomposes this pigment with the formation of brown iron compounds. This color is accordingly unsuited for tinting cloth containing traces of alkali or for use in slightly alkaline starch mixes. Such mixes may be adapted for use with this pigment, however, by slightly acidifying with small amounts of acetic acid.

Indanthrene and Indigo Blue are suited for use as fast to light tinting colors. While actually dyestuffs, these materials are available as blue paste in which the dye is suspended as finely divided particles, and is insoluble in water. These colors are fast, to acids, alkali and light while the indanthrene blue is quite fast to chlorine. The exceptional fastness of these colors is occasionally a drawback to their use and may handicap the finisher should refinishing become necessary since it is almost impossible to remove it. Alkaline mixes containing reducing materials such as glucose for instance have a tendency to destroy the color, especially on standing hot for any length of time. An interesting example of this was one in which Indanthrene Blue had been used satisfactorily with a soap softener but when it was decided to use a starch gum having decided reducing properties in conjunction with this, trouble developed. After boiling this new mix, the color was apparently satisfactory but on standing hot lost 50 per cent of the tint in an hour with the acquisition of a slate color which on longer standing became a dull grey. Investigation showed that by adjusting the pH of the solution with acetic acid to 7 or thereabouts, this trouble could be eliminated.



A tinting padder for use in the tinting of piece goods .

Acid Colors—for Staining

Acid colors are a class of water soluble dyes which merely stain the cotton and can be washed out of the fabric. They are relatively bright colors but are not very fast to light. Exposure for twenty-four hours in a Fade-Ometer will entirely destroy their effect on white fabrics and seriously fade darker colors. The blues and violets are used for tinting whites while a wide range of other colors are available for tinting starch mixes for special shades. These colors are often used for tinting and coloring heavy starch mixes such as used in calendered book binding cloths in which the fabric may be merely bleached, while the finishing mix is deeply colored. These colors are soluble in either alkaline or acid mixes and are sold as powders, which generally are dissolved in water to make a stack solution. An advantage in using this class of color in tinting backfill mixes for colored goods is that should re-finishing be necessary, the finish can be removed without increasing the depth of color.

Direct Colors—for Coloring

Direct colors are water soluble dyes which actually dye the cotton fiber in contrast to the staining with acid colors. Some members of this class are reasonably fast to light and washing, although yielding whites of inferior brightness to those tinted with acid colors. Imperfections in the cloth, moreover, may show up more pronounced with direct colors especially when not uniformly absorbent, chafed or containing oxycellulose, through changed affinity for the dye. These dyes are used more for the production of creams, pinks, flesh and light buff directly in the starch mix than for tinting whites.

Practical Applications

Backfill mixes tinted with these dyes applied to colored goods are not so desirable as when tinted with acid colors in case re-finishing is necessary. The former may increase the depth of shade during

removal of the starch, thereby necessitating partial stripping and re-dyeing to shade, while the acid color merely washes out. These colors can be used in either alkaline or slightly acid mixes although care must be exercised in their selection since many are sensitive to slight changes in acidity or alkalinity and show decided color changes under these conditions. They are generally used, however, in alkaline solutions.

Basic colors like acid colors have little or no affinity for cotton fibers although capable of slightly staining bleached cotton. Oxycellulose is deeply dyed with these colors which may lead to irregular tinting with overbleached cloth when basic colors are used. This fact is the basis of the Methylene Blue test for oxycellulose. These colors are soluble in water or dilute acid but decompose in alkaline solution to give a tarry precipitate, that, if picked up by the cloth, would develop into a colored stain. Many of these colors react with direct colors to form precipitates and therefore, should not be used to shade Prussian Blue, saffranine being commonly used for this. With the red saffranine tending to neutralize the green tone of the Prussian Blue, the resulting white does not turn green on ageing nor in light tints.

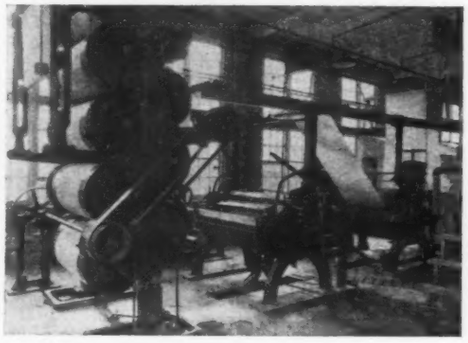
Glues and Gelatines

Glue and gelatine are used only to a limited extent for special effects in the finishing of cotton piece goods although gelatine has long been used in silk finishing. Gelatine, however, for most purposes can be considered as a cleaner and purer form of glue which because of its high price is rarely used in cotton finishing since glue meets the usual requirements equally well. Three types—bone, hide and fish glue—are made in several grades, the quality of which depends mainly on the source of the raw materials and the care exercised in manufacture. Glue is a horn-like protein substance, which swells in cold and dissolves in hot water to give a thick viscous solution, which on cooling, sets to a stiff jell. The better grades have strong adhesive properties and large quantities are used in various industries for this purpose. It is a decomposition product obtained by hydrolosis of connective and other animal tissue when boiled; and reaches the market in various forms, such as sheets, flakes, powdered, liquid, and, recently, dried droplets or beads have been imported from Europe. In color, it varies from a pale yellow to a dark brown while the odor is usually more pronounced and disagreeable in the lower grades. Fish glue is habitually scented to disguise the characteristic odor.

Manufacture of Glue and Gelatine

Bone glue of the better grades is made from green bones by two general processes. The bones may first be treated with acid to dissolve the calcium phosphate and after removal of the acid, the remaining cartilaginous material is successfully "boiled" with water in open wooden tubs. The first boil is about 70 degrees C. while the following ones are run at slightly higher temperatures, each boil lasting from two to eight hours, with enough boils being used to exhaust the stock. The second general method consists of first extracting the bones with benzine to remove grease, following which the bones are heated in closed pressure cookers at 10-20 pounds pressure which hydrolizes the tissue to form glue. This dissolves in the water and after clarifying or filtering, may be bleached with sulphur dioxide if necessary, and then concentrated in a vacuum evaporator at 60 degrees C. to approximately 30 per cent glue content. The solution is poured into molds, chilled and after removal as a jell, is cut into slices. These slices are air dried at relatively low temperatures on wire frames in special drying ovens to yield a product containing approximately 15 per cent moisture. Lower grades are obtained by successive treatment of the bone as well as from inferior stock.

The stock for hide glue is obtained mainly from trimmings from tanneries as well as other miscellaneous sources. The value depends to a great extent on the animal from which the hide was obtained, calf and cattle yielding the better quality while pig and horse hides are of lesser value. Hide glues are generally made in the open tank as outlined and dissolved at comparatively low temperatures. Fish glues are commonly prepared as liquids by heating skins, heads, bones, etc., of fish.



Tommy Dodd back filling mangle between pure starch mangle and dryer

Briefly, then, the chemistry of glue manufacture consists of the hydrolosis of the insoluble proteoids of tissues or bones, collagen and ossein respectively by boiling with water to form gelatine. Prolonged boiling, however, converts gelatine to gelactone or gelatine-peptone. The latter is hydroscopic and sticky but has no adhesive strength. Their formation is, therefore, avoided in manufacture of the better grades of these products. Heating gelatine to 130 degrees C. on the other hand is claimed to convert it back to collagen.

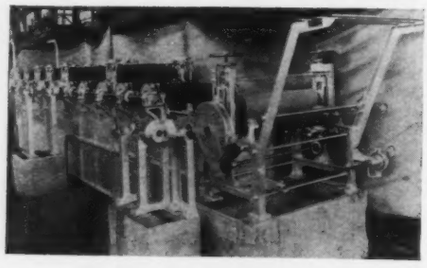
Uses of Glues and Gelatines

Solutions of gelatine above one per cent set to a jell on cooling the properties of which depend mainly on the concentration of gelatine, its origin and method of manufacture. This liquid-jell system is reversible, the jell melting with heating although repeated heating destroys this property of gelatinizing through the progressive formation of gelactones. The formation of these latter products is facilitated

by the presence of dilute acids, some salts, and enzymes.

Solutions of glue or gelatine are highly colloidal and are used as protective colloids in many industries. As a protective colloid, gelatine to the extent of ½ per cent is used in ice cream manufacture to give a smooth product by preventing the formation of ice crystals as well as the coagulation of the casein in the cream. Two per cent of gelatine will also prevent Plaster of Paris setting within 48 hours while smaller amounts delay this correspondingly.

These solutions also have dispersion properties and in the dyeing of vat colors, use is made of this property. An interesting demonstration to show the effect of glue in promoting better penetration in pigment-pad vat dyeing is by carefully spotting blotting or filter paper with a one per cent solution of a vat paste such as Indanthrene Blue BCS or other, with and without small amounts of glue. It will be found that the spot containing glue will have color



Vat dyeing range: padder, reducing tanks and wash tanks . . .

extending practically to the edge of the wet area, with the color quite uniform in density. In the case of the spot without glue, the color will cover only a small area in the center of the drop while the liquid will form a wide colorless band beyond by capillary travel. This demonstrates clearly how the addition of glue to a pigment-padding enables the pigment to reach the interior of yarns and to promote level dyeing after the subsequent operations.

Gelatine is insoluble in strong alcohol solutions and most of the organic solvents. It is soluble in acids to form liquid glues. Strong acetic or dilute nitric acids are used for this and the solutions lose their power of jelling although they are strongly adhesive. Several other interesting reactions of glue and gelatine have been applied in the arts. Formaldehyde forms an insoluble material with them which is insoluble in either hot or cold water. This reaction has been applied in finishing book binding fabrics and other cloth with water-proof finishes. Both chrome and potassium alum combine with gelatine, a fact which has also been applied in textiles and in the hardening of photographic films. Dichromate, however, forms a light-sensitive compound which becomes insoluble on exposure to light in 15 minutes or takes 8 days in the dark. This reaction is the basis of the photo-lithographic process by which a film of bichrome-gelatine is exposed under a photographic negative to light. The exposed parts become insoluble, while the rest of the film is removed with warm water and after hardening in alum, the impression is transferred to a lithographic stone.

Tannins likewise combine with glue or gelatine to form buff colored products in fairly definite proportions in dilute acid solution. This reaction is utilized in the tanning of hides as well as in the estimation of the tannin strength of the natural tanning materials.

In practice, glue or gelatine is usually allowed to swell in cold water, which it does without alteration of shape or going into solution to any great extent. Overnight is a convenient time, although a shorter interval suffices if necessary. The swollen glue is then heated when it starts to melt at about 83 degrees F. and is quite fluid at 125 degrees F. Its application to the textile industry is greatest probably as sizing for rayons and as a finishing material for silks. Where consideration of elasticity and luster are important, the use of gelatine is claimed to be more satisfactory than starch with these fabrics. Various formulae with gelatine are used, one for rayon size being as follows:

1 lb. 8 oz. gelatine
8 oz. wax
10 lb. sulphonated castor oil 50%
10 gals. water

A silk scroop is given rayon by first padding it in a 10 per cent soap solution and then through a solution containing tartaric acid, glue and formaldehyde, followed by drying.

Showerproof finishes are obtained by the formation of the formaldehyde-gelatine compound on cloth in conjunction with aluminum acetate or sulphate. Such solutions can be purchased on the market as one bath water-proofing compounds. A formula proposed by Trotman is:

5 lb. Gelatine
200 lb. 3% Aluminum Acetate Solution
5 lb. Formalin 40%
100 lb. Water (12 gals.)

The goods are padded with the solution and dried. Formulae such as the one given are also suited for spot-proofing book bindings although the coated fabrics are crowding these fabrics off the market.

Glue is occasionally used as a stiffening and binding material in special heavily sized fabrics, because of its strong adhesive properties. Its use for this, however, is limited because of its relatively high price.

Casein

Casein is one of the lesser used materials employed in finishing, its cost preventing general application except in some limited number of finishes. It is a complex nitrogeneous organic compound, classified as a protein, and is prepared industrially from milk in which it occurs colloidally dispersed as the calcium compound to the extent of about 3½ per cent.

The technical preparation of casein is based on its precipitation from milk on the addition of slight excess of acid. The fat is removed from milk by repeated centrifugal separation, after which dilute hydrochloric or sulphuric acid is added gradually with stirring, until precipitation is complete. Following this, the mix is settled and the supernatant

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THIS is the eighth article in a series by Mr. Clark. The first, on Water, appeared in the June 1933 issue; the second, on Softeners (1), in July 1933; the third, on Softeners (2), in August 1933; the fourth, on Starches, Gums and Dextrines (1), in September 1933; the fifth, on Starches, Gums and Dextrines (2), in November 1933; the sixth, on Fillers, etc. (1), in December 1933; and the seventh, on Fillers, etc. (2), in January 1934 . . . .

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liquor drawn off. This is followed by repeated washing until the wash water is neutral. The washed curd is then pressed to remove excess water and after crushing slowly, dried at low temperatures in a vacuum drier. The finished product will contain approximately 9.25 per cent moisture and .75 per cent ash, and is usually prepared as a white or slightly yellow powder.

Casein swells but is insoluble in water. The addition of alkalies, however, causes it to dissolve with the formation of adhesive solutions. These solutions can be boiled and are quite stable. Solutions with the alkali-earth metals, however, can not be heated above 40 degrees C. since at this temperature, the formation of the insoluble metal-casein compound occurs. Formaldehyde and treatment with soluble chromates, followed by exposure to light also causes casein to become insoluble.

While acid is used for the technical preparation of casein, it may also be separated as the calcium compound by the addition of alcohol or salt to milk. Salts of the heavy metals precipitate the metallic salt of casein while enzymes such as rennet precipitate modified forms, the latter being the basis of cheese making.

The applications of casein to industry and the arts are extremely numerous and diversified. It is used for making glues and adhesives in the wood and paper industries as well as an ingredient in sizes in the latter. Casein paints are widely employed for both commercial and artists' work. These paints are usually composed of alkaline solutions of casein in which the pigments are suspended, some of which may also contain emulsified oil. Large quantities of casein are also consumed in the manufacture of plastics and electrical insulating materials. Iodine, mercury and silver compounds are used in medicine, while some of the alkaline compounds are used in special food mixtures.

Casein in Waterproofing

Its application to textiles in general depends on its formation of insoluble compounds with formaldehyde, calcium or aluminum salts in the preparation of various waterproof finishes. One such formula is as follows:

50 parts casein
20 parts soap
1 part fresh lime
440 parts water

The cloth is padded with this solution and then passed into a bath of aluminum acetate at 50 degrees C. It is then washed and dried to remove excess chemicals. It is claimed that the waterproofing obtained in this way can be washed in either water or benzine.

Another formula which has been used for waterproofing book binding cloth depends on simply padding the fabric with a solution of casein solubilized by borax, 14 per cent of which, based on the weight of casein is sufficient. This is then dried and passed through a dilute solution of formaldehyde, following which the goods are dried on a hot frame.

Zimmerman in 1894 obtained an English patent covering the addition of formaldehyde to an alkaline solution of casein without precipitation of the casein-formaldehyde compound. Care must be taken, however, to avoid an excess of formaldehyde. The proportions cited were:

100 parts casein
15 parts caustic
15 parts formalin
870 parts water

This solution becomes insoluble when dried on the fabric.

These finishes are seldom used now since the utility waterproofers have cheaper and more effective methods while finishers generally are able to apply commercially prepared emulsions of aluminum stearate much cheaper with better surface repellency. Some of these preparations may, however, contain casein as a dispersing agent. Colloidal solutions of rubber are frequently dispersed with alkaline casein.

(The next installment will continue this discussion by Mr. Clark, and will cover Rosin, luster-producing and water proofing agents, enzymes and sulphonated alcohols, etc.—The Editor.)

Fire in Tenter Ducts

"Possibly because a part of the tenter exhaust fan became loose and caused sparks, a fire started in lint deposits inside a large duct extending from the tenter enclosures up through the second story and above roof.

"The operator ran out and pulled the fire-alarm box which notified both mill and village fire brigades. Members of the mill brigade living nearby arrived first and went to the roof where the fire had ignited a hose house over a roof hydrant near the duct. They managed to get the hose from the house and used the stream to extinguish the roof blaze, after which they directed the stream down into the exhaust duct. Meanwhile, the village department had arrived and dropped their pumper section into the mill pond, using a 2½-inch hose to extinguish the fire in and around the large tenter fan in the first floor. This fire had been kept from spreading by five sprinklers which opened. A sprinkler near the duct in the second floor also opened, and wet down finished goods. The loss was about $750.

"Lint deposits in ducts of this kind should be cleaned out frequently and clean-out holes should be provided for this purpose."—*Factory Mutual Record.*

NRA Effects on Textile Exports and Imports Shown by Brewster

Sloan hails machine hour limitation as outstanding achievement of code; other NRA developments . . . . . .

This is a further chronological record of developments in the administration and operation of the textile codes, and their effect. The period covered is the month of February, up to February 28, and this record, picks up where the report on page 78 of the February issue left off. No attempt at interpretation is made, and, in so fast-changing a picture, no pretense is made of prediction, of further change, even during the time between the writing and the appearance of this story. —The Editor.

DURING February the textile industry continued operation under the provisions of its various codes. (See page 91 for report of developments under hosiery code.) During this month there were no major developments of importance in conjunction with code administration. In addition to the curtailments provided for in January (see page 78 February COTTON) the recovery administration announced on January 31, through the Cotton Textile Code Authority, an emergency requirement regarding a reduction in machine hour operations during February and March in fine cotton goods mills and in mills manufacturing fabrics made with warps finer than 32s and/or fillings finer than 43s. The curtailment was to "suspend operations on all looms on fine cotton goods for three days in February and three days in March, such days to be interpreted as full working days of not less than a single shift of eight hours, if any mill is operating on a single-shift basis, and not less than two shifts of a total of sixteen hours, if on a two-shift basis, and the time so lost shall not be made up by any method; that 300 looms in each mill are exempted from this requirement and that a legal holiday may be included as a working day for the purpose of this requirement."

At a meeting on February 20th in Washington, reorganization of the Underwear Institute to provide assurance of the equitable representation of all groups subject to the underwear code was perfected.

Sloan's Address at Providence

George A. Sloan, president of the Cotton-Textile Institute, and Chairman of the Cotton-Textile Code Authority, in February made a report to administration, details of which may be found on page 39 of this issue, outlining the effects of the code upon the industry. On February 20, speaking before the Rhode Island Textile Association in Providence, Mr. Sloan reviewed the cotton-textile code in its various phases, emphasizing, as the outstanding achievement of the code, the limitation upon machine hours. He declared that,

> "Frequently the question has been raised as to what we regard as the outstanding achievement in the cotton textile code. What, in this first partnership agreement with the government, held out the most promise to the industry and its employees? Tonight my answer is the same as it was on July 17th, the effective date of the code. Beyond all question of doubt, it is the limitation on machine hours. Fully recognizing the benefits that have come from shortening the work week, from the establishment of minimum wages and other wage provisions, I still maintain that there is no provision in our code that begins to approach in importance the reasonable restraint that has been placed on overcapacity—whether you view the matter from the standpoint of the industry, the industry's employees, or the industry's customers. In fact, I am willing to go further and express the opinion that there is no provision in any one of the nearly 300 codes approved by the President which has contributed so much to recovery, to the salvation of a depressed industry, to the restoration of jobs and to making it possible for an industry to assume the burden of added NRA costs, as our provision limiting operation of productive machinery to 80 hours weekly. It is the crux of the code. It is the staff of life for our industry."

Generally, the textile industry was anticipating the general code meetings to be held in Washington during the week of March 5th, under Recovery Administrator Hugh S. Johnson. It was felt in the industry that much of common good would result from the proposed joint conferences between the various code authorities. The textile industry itself, many felt, would gradually veer away from the idea of group curtailment which had been started, and work out a basis of general curtailment with provisions for exemptions being requested and granted in individual cases. The "border-line" plants, mills making a wide variety of fabrics whose specific classification under any group was difficult to ascertain, complicated group curtailment greatly.

Of prime importance to the cotton-textile industry were figures and information made available during February by the Association of Cotton Textile Merchants of New York and the Textile Export Association with reference to the relation of the cotton textile export business to the cotton textile industry. The Textile Export Association and export houses

have been working diligently to bring about relief. Actual figures as to the results in export trade following the application of the cotton textile code are given in a communication from Walter S. Brewster, president of the export association, to George A. Sloan, which read as follows:

The Export and Import Situation

"In his radio address on May 7, 1933, President Roosevelt announced that industry should be given the opportunity of constructive self-government and stated particularly that the cotton textile industry would welcome such an opportunity for improvement. The Congress provided the necessary machinery within the National Industrial Recovery Act. Hardly before the ink was dry on the President's signature, which made NRA the law of the land, a recommended code for cotton textiles was in General Johnson's hands.

"As you know, our approved code, effective July 17, 1933, carried with it provision for minimum wages and maximum hours which more than doubled our monthly payrolls and measurably increased our overhead charges. Freed from the never-intended purpose of the anti-trust laws, we welcomed this first opportunity for self-control under Government supervision. We were glad that such first united action of our industry concerned itself primarily with improvements for the worker. Hours were shortened and we find that whereas the number of employees on the industry's payrolls in March, 1933, amounted to 320,000, this figure increased to 451,000 in July, and 460,000 in August. In addition to increasing wages throughout the industry, we brought our employment status back to the 1926 level. After six months practical experience under the first code, we are still strong believers in the NRA and we are enthusiastically supporting its administration under General Johnson.

"Search our code through and you will find no recorded effort to establish a scale of prices. Our first concern was recovery, was to get more people back to work, was to increase purchasing power. We were considerably concerned, and so expressed ourselves at that time, over this increased burden on the cost of cotton goods. Cotton is the base of the moderate priced clothing of the world. Our staple foods are sacked in cotton cloths. We have been exchanging cotton goods with the West Indies and the Philippine Islands for their tobacco, oil and sugar. Our exports of cotton goods have been about 500,000,000 yards per year which requires over 1,000,000 spindles tended by more than 35,000 operatives.

"We called the attention of the Administration to the fact that these NRA additional costs should be equalized if we were to save our export business and save the jobs of 35,000 people employed in the manufacture of cotton goods destined for export markets.

"Cable report of conditions in the Philippine Islands issued for release on January 27 by the Department of Commerce shows us the extent of the loss of business of the United States in the Philippine market to Japan.

"Philippine imports from the United States in piece goods in July, 1933, show that 80% came from the United States, compared with 10% from Japan and the remaining 10% from other countries, and, by November, 1933, the share of the United States had fallen to 32% and that of Japan had risen to 56% with the remaining 12% being divided among other countries.

"In January, 1933, Japan exported to the Philippine Islands 1,930 packages of cotton goods. During the same month, the United States exported 7,029 packages. In December, 1933, Japan exported 6,250 packages to the Philippine Islands and the United States 2,890 packages. New business to the Philippine Islands has reached the vanishing point.

"Japan has recently accepted the Indian Government proposal by which Japan will take 1,500,000 bales of Indian cotton per year and will export to India 400,000,000 yards of cloth. The 1,500,000 bales of cotton will make over 2,000,000,000 yards of cloth. Some of these Japanese cloths made of Indian cotton will replace in the Philippine Islands and in Cuba, American cloth made out of American cotton in American mills, but we still continue to take tobacco, cocoanut oil and sugar from these Islands. It did not take India long to swap to Japan cotton for cloth; we seem to be able to swap quickly apples and pears to France for wines and liquors; but are we as quick about swapping cotton goods? We seem more concerned in plans for plowing up cotton—more willing to fit production to home demand which has forced curtailment in cotton textile production causing decreases in employment and payrolls, all of which has become necessary and due in part to the fact that Japan takes Indian cotton, depreciates its currency, provides Government subsidies, and not only drives our goods out of Cuba and the Philippine Islands, but is actually shipping cotton products to the United States.

"Our exports should not be abandoned unless and until such decision is reached as a result of a carefully thought-out plan. Leaders in our industry have indicated that if a national policy of isolation is determined upon, this industry would doubtless be willing to be a partner with the Government in a program to measure the price we pay for cotton, and the price we pay for labor in the cotton mills by whatever our people will and can afford to pay for the finished product. But our Government has not embarked upon such a program. And as long as we are paying billions of dollars for CWA jobs for emergency relief, shouldn't our Government give serious thought to financing a plan to save the jobs of those who have been growing the 200,000 bales of cotton and those 35,000 mill operatives who have been converting this cotton into the 500,000,000 yards of export cloth? If the jobs of these people and all others directly and indirectly connected with them are to be junked, shouldn't it come as a result of a defined plan and shouldn't those affected be told about it before they suddenly are confronted with such tremendous loss in business and employment?

"We believe it is possible for the Government, by means of reciprocal treaties and by exchanges of quotas of products, to retain for us our normal export markets—if not, then by equalization funds for export to offset the extra costs imposed by the NRA."

Significant figures were also presented concerning imports of cotton goods into this country. In 1933 the total imports into the United States were 41,348,079 square yards against 29,435,733 square yards in 1932, an increase of 40 per cent.

Carded Yarn Trade Practices Approved

On February 23, General Johnson approved amendments to the cotton-textile code specifying that trade practices governing the merchandising of carded cotton yarn shall not apply to bona fide export sales of carded yarn, effective March 3. The purpose is to prevent a further decrease in the export business, and to devise a suitable procedure to eliminate the possibility of carded yarn sold for export, and therefore not subject to the trade practices government domestic sales, finding its way into the domestic market. General Johnson approved the recommendation of the code authority, subject to objections to show cause to the contrary.

CURRENT TEXTILE TOPICS. . . .

Talk of the Month

The General Situation in Textile Markets

SO FAR as things can be generally favorable to an industry at large, it would seem that the start of 1934 in cotton should be on the whole regarded as satisfactory. After a month from New Year's it was evident that progress beyond all expectation had been made, as evinced by the report of George A. Sloan to a meeting of the Cotton Textile Code Authority in Washington, showing cloth sales 60 per cent in excess of output for January and unfilled orders at the highest point since the peak of the boom last summer. (See page 39.) And at the beginning of the month now closing, or the middle of February, the goods market was in the midst of a further active progress full of favorable augury to the industry.

Thus early in the year it was manifest that most mills were in a fair way toward operation at the allowable maximum under the code for the spring season. There was a heavy volume of business on goods for delivery up to April and already the selling had begun to stretch far into the second quarter. But withal, it was no runaway development, with the character of a boom such as that last year. Sales have been made cautiously for more than one reason, but a prominent restrictive force is the new order of manufacturing: the code is a factor which enjoins upon the buyer to spread his business, because to meet normal demands the mills must be given a longer time for production and, conversely, the seller must use care not to get into an oversold condition.

Sales have been made on the basis of an active market for finished goods. There has been an unusual parallel of activity in unfinished and finished lines, both reflecting a confidence of retail distributors in the coming, or existing, expansion in consumer demand. A notable development, helping to round out the diversity of demand and itself perhaps the most significant circumstance in the cotton goods movement because of its bearing on the general economic picture, was the really extraordinary pick-up of activity the first of the year in work-clothing materials. Here was a business that clearly showed the government program for re-employment to be working effectually, because the retail buying was behind it.

As stated by a representative of the Cone Export & Commission Company, January was really an extraordinary month in this branch of goods, which had in the depression suffered most drastically from the great unemployment. In contrast with the usual accumulation of stocks in hands of jobbers was a low supply and this was attributable to the best consumer demand for many years at that time. The cause obviously was that workers were going back to jobs by the hundreds of thousands, under the influence of the CCC, CWA, PWA and other projects designed to that end, augmenting the extension of employment by private business during 1933.

Here, it may be hazarded, is the basis of solution for the problem of prices which has been the chief fly in the ointment for the cotton industry in this time of business acceleration. In gray goods, and more especially in finished lines as nearer the consumer, a fear of pressing advances in price too fast has obsessed the trade. The rapid rise in raw cotton enhanced this fear, though not in all quarters. Some believed that the low-price idea was being exaggerated; that consumers would seek good cloths that might be found at fair advances.

Of course the first influence of wider employment was not to create higher returns for those already at work. Hence the individual purchasing power remained low. But the inevitable result of wider mass purchasing power is higher income for those who purchase the better grades of goods. Already the movement has begun, as indicated in the resumption of dividends, which obviously swell individual incomes. It is well known that the mass purchasing power is the foundation stone of individual prosperity. What makes the bulk of demand for all production of the country is the thing that gives the buyers of quality output their spending capacity. There is the way out of depression and the substance that will take care of higher prices, ultimately if not right away. But naturally sellers do not want to outreach the buyer by proceeding too fast.

Among the interesting items of progress in cotton, the report of the Association of Cotton Textile Merchants of New York showing spindleage-hour activity in 1933 as 23 per cent above that in 1932 is significant of demand and also of an improving statistical trend in the raw material. The consumption of cotton was 1,200,000 bales larger for 1933 than for 1932, or about 24 per cent. At the time of writing, the crop control situation was rather uncertain, but at any rate the demand position was of good augury.

In the matter of textile fiber consumption, the magazine of the Tubize Chatillon Corp. is enlightening not only for its presentation of figures to show the advance of rayon but the great preeminence of cotton. Rayon in 1920 was only 0.3 per cent of the five leading fibers. Cotton was 89.6 per cent. Rayon has gone far beyond silk in the interim, although the latter strangely has gained too. But if cotton and wool are sharing more of the field, they continue to progress. Cotton was reduced to 83.7 per cent, yet consumption was actually larger in 1933 than in 1920, viz., 3,031,000,000 against 2,822,200,000 pounds.

In the second quarter of 1933 the consumption of cotton reached 1,788,000 bales, which contrasted with

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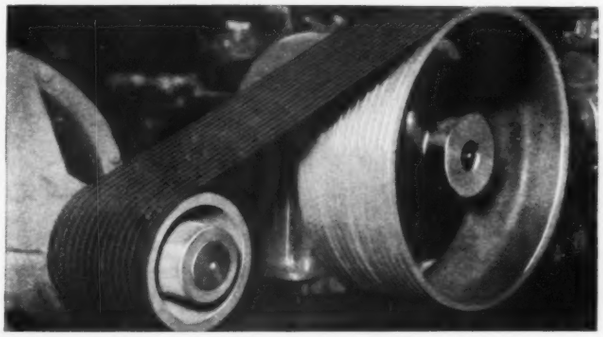

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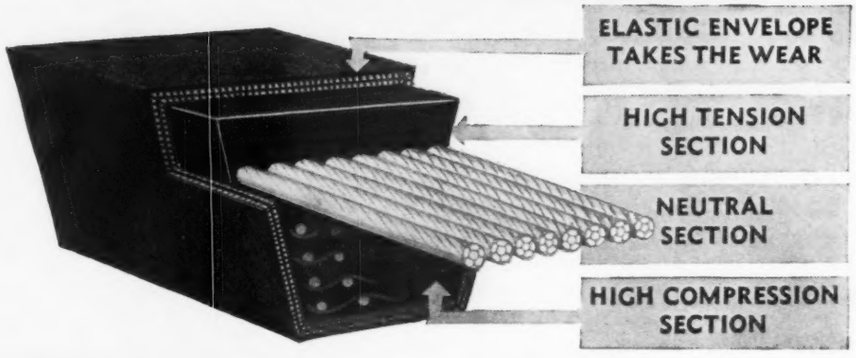

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TEXTILE BELTING

MADE BY THE MAKERS OF GOODYEAR TIRES

a low for the depression of 1,021,000 in the same three months of 1932. The total a year ago was the best of any quarter since the second of 1929. Aside from 1,870,000 at that time and 1,895,000 in the first quarter of 1929, April-June of 1933 reached the best level in the last six years. A total for last year of 6,211,000 bales compares with 5,013,000 in 1932, 5,444,000 in 1931, 5,378,000 in 1930, 7,050,000 in 1929 and 6,572,000 in 1928.

New England Mill Situation

BRISK buying of goods the first two months of the year was not the only harbinger of a favorable spring for the cotton mills of New England. There were reports of a mill issuing a call for more weavers; further announcements of gains in payrolls in mill districts, significant of wider and better wages; the plans for electrification of an old and well known plant at New Bedford that in the depression was in danger of liquidation; announcements of dividend resumptions and expectations of more; the announcement of one company of plans for application of an RFC loan; finally, as the background of activity in unfinished goods, a substantial bulk of business in the finishing end.

Textile activity, said a large mercantile agency in a weekly report of February, is one of the principal factors in the upward trend of business in New England. During the time of slackness the latter part of 1933, there was a new note of stability and when buyers opened 1934 with heavy requirements to fill they had become convinced evidently that nothing was to be gained by procrastination, whereas considerable danger lay in postponement under the regulations that rule mills today. As a result of the January business, it was found possible to ease up on the extra restrictions under the code, imposed at the start of December.

Picturesquely setting forth the beginning of rejuvenation in the textile industry of Fall River, a full-page newspaper feature article is captioned as "Fall River's 'Rheumatism'" and the sub-title says: "Goodbye to all that". Elsewhere it is reported that the January meetings of the textile mills in Fall River have reflected in a very definite degree the improvement in the industry within recent months. Operating losses have been replaced by surpluses which, if not large, in comparison with those of bygone years, are significant for the future.

Based upon conditions the first six months under the code the outlook is promising for New England mills generally. At the start of another six months, the outlook is possibly more favorable. For one thing, the present situation lacks the "boom" characteristics of the movement last summer and a new stability may be anticipated, with buyers as well as sellers aware of the need to spread business. Mills have had very definite costs which practically prevented them trying old and uneconomic tactics of trying to spur business in dull times. They also are under regulations which suggest that buyers who are not forehanded will be left stranded.

It may be that the time for new expansion in the cotton mill industry is far off, and it may be otherwise. At any rate, the tide has turned sufficiently to encourage continuation of plants that were in trouble and even in line for extinction. Notable in this respect is the Kilburn Mill No. 2, at New Bedford, which was threatened a year ago with dismantling but today is renovated and ready to operate on more modern basis than before, with electrical equipment in place of steam for power. This change is attributed to revival of demand for New England combed yarns.

Somewhat different but similarly significant of confidence in the industry today was the announcement, in connection with sale of the Stevens mill property at Fall River in the middle of February, that operations will be continued. The plant was sold on February 15, to satisfy claims of creditors. This was formerly one of the prosperous textile enterprises of the district, its product including Stevens bedspreads of high reputation. Clarence Whitman & Sons, Inc., the chief creditor, purchased the plant almost entirely and will save it to Fall River.

Among the further changes of the industry in this section is the move of the Barnard Manufacturing Company of Fall River for an RFC loan to restore its position. The plant more than doubled in 1933 its output of 1932 and early in February was calling for 50 box loom weavers as the result of a good demand for clipped dot marquisettes which started plans for resumption of 250 looms. The two cases mentioned are only the beginning of what is considered likely to develop into a broad movement in the revamping of Fall River cotton plants this year.

The Influence of Rayon Fabrics Among New England Mills

Rayon, being so comparatively new a branch of textiles, is leading in progress, but it is notable that cotton is second and persists in holding an extraordinarily large proportion of all such production. Someone said long ago that rayon was become the handmaid of cotton. In this connection the New England textile mill brokers, Sanford & Kelley, say that "in New Bedford we believe it is not an accident that the Hathaway Mill, which has spent the most time and effort in efficiently adapting its plant to the making of rayon fabrics, is the one plant that made such very substantial profits and paid the most dividends to its stockholders. Another New Bedford plant similarly efficient is the Gosnold." The Gosnold resumed preferred dividends after a two-year lapse.

These brokers say further:

"We still believe that great progress will be made as a result of continuing improvements in the manufacture of rayon and other forms of artificial fibers. Textile interests, also, might do well to watch the development of the different lines of so-called cellophane. Cotton, rayon and cellophane all have much the same basic formula. On the stage cellophane dresses have been successfully used and already printed colored patterns are beginning to appear successfully applied to cellophane products. Some of these printed cellophane products appeared at Christmas as fancy wrapping for parcels. International bankers and chemical concerns seem much more impressed with the possibilities of these new products than do textile executives. Their growth in use and constant improvement in serviceability cannot be denied because they are a matter of statistical record."

HERE'S A REAL depression record for you! Between 1929 and 1934, when equipment purchases were almost nil, the buying of Armstrong's Seamless Cork Cots skyrocketed.

Why? First, because seamless cork cots save money. Mill men themselves will tell you cork has cut their roll costs 60% on an average. That saving, so welcome during the lean years, is even more important today because operating costs are higher under the code. Armstrong's Cork Cots will help you make up the difference.

But there's more than money to consider. There's quality! Cork-equipped mills report equal or better yarn. Improved running conditions, too! Lap ups and clearer waste are greatly decreased and eyebrows practically eliminated; hard ends and high humidity have little effect on cork; roll changes are reduced and there are fewer piecings and slubs in the yarn.

Look at that 1934 percentage again. One-fourth of the spindles in the country—running on all types of yarn—are now covered with Armstrong's Seamless Cork Cots and the number is increasing rapidly. Think that over carefully, if your spindles aren't among these 6,100,000.

Armstrong Cork & Insulation Company, Textile Division, 923 Arch Street, Lancaster, Pennsylvania.

6,100,000 SPINDLES NOW ON CORK

Armstrong's SEAMLESS CORK COTS

For Spinning and Card Room Rolls

What the Southern Mills Are Doing..

Clark Thread Co., Clarkdale, Ga., near Austell, are erecting a new one-story building 100x100 feet. Arthur K. Adams Co., Atlanta, are the contractors, and J. E. Sirrine & Co., Greenville, S. C., the engineers. The building will be used for storage purposes.

Pepperell Mfg. Co., Lindale, Ga., are installing General Electric Vapor Lamp lighting units, it is reported. Other mills making similar installations recently or currently are: Hartwell (Ga.) Mills; Erwin Cotton Mills Co., Durham, N. C.; Marion (S. C.) Mfg. Co.; and Graniteville (S. C.) Mfg. Co.

Five large cotton warehouses are being completed at Cannon Mills Co., Plant No. 9, Concord, N. C.

Erwin Cotton Mills, Durham, N. C., are erecting eleven 5-room dwellings in one of the mill villages.

Tabardrey Mfg. Co., Haw River, N. C., are erecting a one-story addition in which 250 ooms are to be installed.

Cascade Rayon Mills, Inc., Mooresville, N. C., has been organized to operate that part of the old Cascade Mills, at Mooresville, recently acquired by J. Spencer Love, of Burlington, N. C., and associates.

Appleton Mfg. Co., Anderson, S. C., is planning the construction of a bleaching plant 110x210 feet. J. E. Sirrine & Co., Greenville, S. C., are the engineers.

Springstein plant of Springs Cotton Mills, Chester, S. C., will reopen in March. All mill buildings have been remodeled, and new equipment, including 464 Model X high speed Draper looms, installed. Robert & Co., Inc., Atlanta, Ga., are the engineers.

Kershaw (S. C.) plant of Springs Cotton Mills recently installed Hermas shearing equipment, secured through Carolina Specialty Co., of Charlotte, N. C. Other mills making recent installations of this equipment include: Entwistle Mfg. Co., Rockingham, N. C.; Consolidated Textile Corp., Lynchburg, Va., Shelby, N. C., and LaFayette, Ga.; Republic Cotton Mills, Great Falls, S. C.; Clinton (S. C.) Mills. Combination vertical brushing and shearing machines have been installed at Pacolet (S. C.) Mfg. Co.; Pacific Mills, Columbia, S. C.; Gainesville (Ga.) Cotton Mills; and Drayton Mills, Spartanburg, S. C.

The plant of the Opelika (Ala.) Manufacturing Company has been leased for one year by the Wehadkee Yarn Mills, of Rock Mills, Ala., of which Joe L. Lanier, of West Point, Ga., is president. The plant will be put into operation immediately.

Lanett Bleachery & Dye Works, Lanett, Ala., have installed a new Sanforizing machine.

Bibb Mfg. Co., Porterdale, Ga., have installed shrinking equipment furnished by Rodney Hunt Machine Co., Orange, Mass.

Wiscassett Mills Co., Albemarle, N. C., are constructing an addition 30x300 feet, and it is reported that spinning equipment will be installed.

Parkdale Mills, Inc., Gastonia, N. C., recently installed 11 cards, 2 combers, 2 drawing frames, 1 roving frame and 4 winders; and also a new lighting system.

Steele's Mills, Rockingham, N. C., are installing additional looms in the mill and are constructing additional houses in the village.

Fort Mill Mfg. Co., Fort Mill, S. C., are installing water and sewerage facilities in 277 employees' homes.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., have installed a modern rope soaping range, and four 4-ton Hunt-Jefferson kiers, furnished by Rodney Hunt Machine Co., Orange, Mass.

Alabama Hosiery Mills, Decatur, Ala., have awarded contract to Parks-Cramer Co. for air conditioning equipment for the plant.

Rogers Hosiery Mills, Denton, N. C., is adding an extension which will increase the mill's productive capacity approximately 40 per cent.

G. & H. Hosiery Mill Co., Hickory, N. C., are erecting a new building, into which existing machines and some new equipment will be installed.

Goodman Hosiery Mills, Hickory, N. C., have installed 30 seamless machines in the building formerly occupied by Havnaer Glove Co. Charles B. Goodman is owner and Walter Crawford superintendent.

Work has started on the addition to the Pannill Knitting Co., which is to be 75x80 feet, 3 stories high. The concern manufactures union suits, sweaters, etc.

Elizabeth City Hosiery Mill, Elizabeth City, N. C., recently installed 10 full-fashioned machines purchased at the liquidation of Brumbach & Miller, South Temple, Pa.

Mock-Judson-Voehringer Co., Greensboro, N. C., are installing an air purifying and conditioning system.

Whisnant Hosiery Mill, Hickory, N. C., is building an addition, two-story, 40x60 feet, in which 50 new H-H automatic knitting machines will be installed.

Comment on the Cotton Market

New Orleans, February 16, 1934.

The trend of the cotton market continued upward during the past month, with trading decidedly more active. Stimulating influences were the enhancement in the value of gold, further improvement in general trade accounts, the government's campaign for acreage reduction, trade buying, and the Bankhead bill to limit ginnings next season to about 9,500,000 bales.

During the period, or since January 13th, Middling cotton in the New Orleans market advanced $8.05 per bale, being quoted at 12.59 on February 12; the highest price since August 7, 1930. Subsequently values experienced a sharp reaction owing to some opposition having developed against the Bankhead bill and because of uneasiness as regards the European political situation. Late advices from Washington, however, are more encouraging, giving some assurance that the Administration favored the bill in a revised form, caused the market to recover part of the late decline.

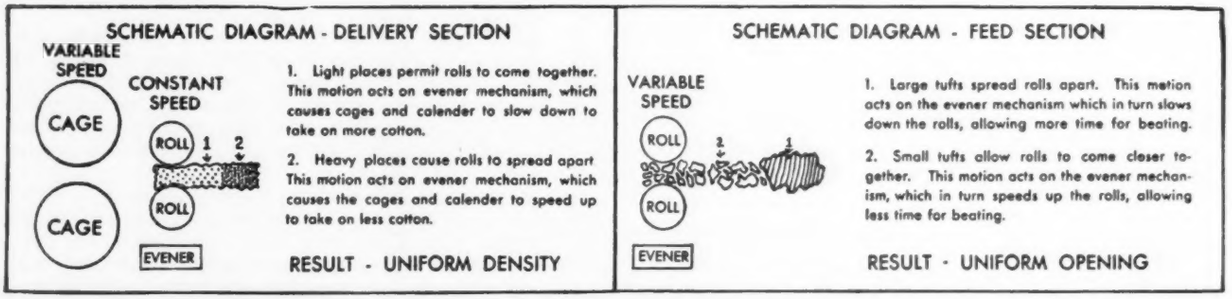
Recently the New York Cotton Exchange Service estimated the world's consumption of American lint cotton during December at 1,059,000 bales versus 1,206,000 in November of this season and 1,145,000 for December of last season, and for the first five months of the season 5,938,000 bales against 5,785,000 for corresponding period last season.

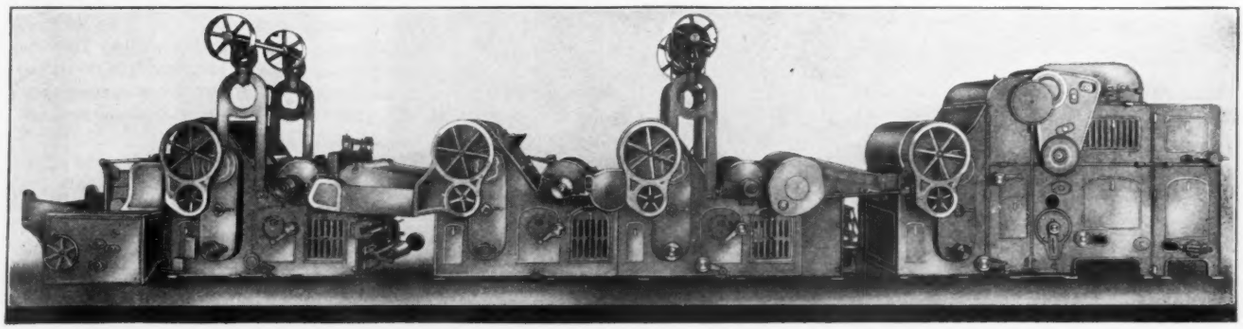
BRITISH BOARD OF TRADE REPORT FOR JANUARY

Year—	1934	1933	1932
Exports of yarn, pounds ..	13,000,000	11,000,000	16,000,000
Exports of cloth, yards ...	179,000,000	197,000,000	180,000,000

Not much encouragement was derived from the British Board of Trade returns for January, but this feature attracted but little attention, more heed being directed to developments as regards the contemplated control of the 1934 American crop.

Unlike returns of the British Board of Trade for January, Census returns as to United States consumption of lint during January showed a marked increase, especially when compared with December domestic consumption of this season, which was only 348,393 bales. This feature, the larger number of spindles active during January than for corresponding month last year, in conjunction with the possibility of the government making further provisions to provide the needy with more of cotton goods, is indicative of


SCHEMATIC DIAGRAM - DELIVERY SECTION
VARIABLE SPEED
CONSTANT SPEED
CAGE
CAGE
ROLL
ROLL
1
2
EVENER
1. Light places permit rolls to come together. This motion acts on evener mechanism, which causes cages and calender to slow down to take on more cotton.
2. Heavy places cause rolls to spread apart This motion acts on evener mechanism, which causes the cages and calender to speed up to take on less cotton.
RESULT - UNIFORM DENSITY
SCHEMATIC DIAGRAM - FEED SECTION
VARIABLE SPEED
ROLL
ROLL
2
1
EVENER
1. Large tufts spread rolls apart. This motion acts on the evener mechanism which in turn slows down the rolls, allowing more time for beating.
2. Small tufts allow rolls to come closer together. This motion acts on the evener mechanism, which in turn speeds up the rolls, allowing less time for beating.
RESULT - UNIFORM OPENING



OVER 99% PRODUCTIVE EFFICIENCY
with H & B's Patented System of Evening

IF EVEN YARNS ARE DESIRED it is necessary to start with even laps.

Unsolicited reports from mills using the new H & B One Process Picking state the following:—

In one case only 4 laps out of 700 had to be reprocessed because of unevenness or because of any other reasons; in another case only 4 laps out of 2500; and in a third case only 5 laps out of 1300. In other words the average productive efficiency in the three mills was 99 $^{99}/_{100}$%.

The H & B is unique among one-process picking systems in that it provides a two-fold method of evening (see diagram).

The first evener, working in the feed section, controls the speed of the feed rolls as in other systems, and provides for uniform opening.

The second evener, working in the delivery section, operates on our patented variable speed calender and controls the distribution of the cotton upon the cage. The feed rolls run at a constant speed, while any heavy or light places in the lap act on the evener, causing the cage and calender rolls to slow down or speed up as required.

Thus, while the first evener provides for *uniform opening,* the second evener provides for a *lap of uniform density* throughout.

H & B laps, made by this system, vary less than $^{3}/_{8}$ to $^{3}/_{4}$ of an ounce from yard to yard.

Since H & B One Process Picking offers the usual savings in power and labor and the usual increased production *Plus* this extra quality in output, why not thoroughly investigate? A letter on your business stationery will bring further information, or, if you so request, one of our representatives.

H & B AMERICAN MACHINE COMPANY
Cotton Preparatory and Spinning Machinery
PAWTUCKET, RHODE ISLAND

BOSTON OFFICE
161 Devonshire St.

ATLANTA OFFICE, 815 The Citizens and Southern National Bank Bldg.

Even Yarns Start With Even Laps
H & B ONE PROCESS PICKER

the probability of the continuance of large consumption by the American mills.

MOVEMENT TO MARKET, EXPORTS AND SPINNERS' TAKINGS

Week ended, February 16th—Bales—	This season	Last season
Week's in sight (marketed)	108,000	140,000
Since August 1st	10,699,000	11,168,000
Week's exports from U. S., inc. Canada	151,000	176,000
Since August 1st	5,351,000	5,492,000
Week's spinners takings of Am. (world)	299,000	257,000
Since August 1st	8,783,000	8,433,000

CENSUS REPORT

United States—Bales—	This season	Last season
Consumption of lint cotton in Cotton Growing States, Jan.	406,343	396,998
Consumption of lint cotton in New England States, Jan.	88,223	61,804
Consumption of lint cotton in All Other States, Jan.	13,468	11,380
Total consumption of lint cotton in United States, Jan.	508,034	470,182
Consumption of lint cotton in Cotton Growing States, 6 months	2,339,429	2,350,830
Consumption of lint cotton in New England States, 6 months	499,512	383,721
Consumption of lint cotton in All Other States, 6 months	84,783	77,636
Total consumption of lint cotton in United States, 6 months	2,923,724	2,812,187
Mill stocks, January 31st	1,602,044	1,499,129
Stock in public storage and warehouses, January 31st	9,500,915	10,020,533
Stocks in mills, public storage and warehouses, January 31st	11,102,959	11,519,662
Stocks in mills, public storage and warehouses, December 31st	11,955,203	11,879,851
Active spindles during January	25,653,324	23,753,638
Active spindles during December	24,840,870	23,799,742

WORLD'S VISIBLE SUPPLY OF COTTON, FEBRUARY 16TH

Bales—	This year	Last year
American	8,670,000	9,905,000
Other kinds	2,233,000	1,786,000
All kinds	10,903,000	11,691,000

The movement to market, as noted, continued light, reflecting the tenacity with which the interior has held to its cotton, and there was a further expansion in spinners takings during the period, compared with corresponding time last season, which was encouraging since they are now running on a basis of 15,523,000 bales for the whole season vs. 15,173,000 for the whole of last season, linters included.

A constructive feature is the further substantial advance in the value of silver, as there were unconfirmed rumors of late that forthcoming steps in Washington to rehabilitate silver and the metal rose to the highest price in four years. One widely circulated rumor was that an announcement regarding silver would be forthcoming over this week-end.

As to prospects for the next American cotton crop, while the soil is generally in good condition, with ample moisture for the present in the ground, with large sales of fertilizer tags reported, as well as large sales of livestock, much will likely depend on acreage reduction and other means of crop control that may be put into execution. If the Bankhead bill becomes a law, next season's gin output may be limited to only about 9,500,000 bales. Sales of tags during December and January are reported to have been for 409,000 tons of commercial fertilizer versus 173,000 tons for corresponding months last season and 120,000 tons for the corresponding period season before last.

According to advices of late from Washington, the sign-up of 1934 cotton acreage reduction contracts by farmers totaled 12,160,482 acres to date and was declared effective by Acting Secretary of Agriculture Tugwell. The goal set by the AAA was 16,500,000 acres, but all figures, it is said have not been tabulated, and the total sign-up is expected to take between 15,000,000 and 16,000,000 acres out of cotton production.

Recently it was stated in Washington that support of President Roosevelt for the compulsory cotton control bill was re-asserted by Senator Bankhead and Representative Bankhead of Alabama, the authors of the measure, after a call at the White House.

Since the market, however, has had a remarkable advance during the past year, with present prices about twice as high as they were twelve months ago, and with much of the prospective developments discounted, at least for the present, caution seems to be advisable at the moment, for while values may bulge further, offerings may increase, especially on spurts. In event of values reacting sharply, a renewal of trade and speculative buying is apt to come into the market, particularly if the Bankhead bill is enacted into law.

Less Than Half American Upland Cotton Consumed in United States

Less than half of the production of American upland cotton is consumed in the United States, but approximately 95 per cent of the cotton consumed in this country is American upland, says the Bureau of Agricultural Economics in a report on the grade and staple length of American upland cotton consumed in the United States, 1930-31 and 1931-32.

More than 60 per cent of the American upland cotton consumed by domestic mills in 1930-31 and 1931-32 was White Middling or better in grade, and approximately 65 per cent of the American upland cotton exported in each of these two years was White Middling or better in grade.

In 1930-31, with a relatively small supply as compared with 1931-32, a greater proportion of the supply of the lower grades, as compared with the higher grades, was consumed, says the report. In 1931-32, with larger supplies of each grade, somewhat the same proportion of the supply of each grade was consumed. A greater proportion of the annual mill takings of low-grade cotton, as compared with high-grade, was on hand in the mill carry-over at the end of each year.

The bureau reports that approximately 45 per cent of the American upland cotton consumed in this country in 1930-31 and in 1931-32 was less than 15/16-inch in staple length, and that in each of these years the crop included a larger proportion of cotton shorter than 1-inch in staple length, and a smaller proportion of cotton 1-inch or longer than was consumed in domestic mills. More than half of the exports of upland cotton in 1930-31 and in 1931-32 was shorter than 15/16-inch in staple length; however, substantial quantities of cotton of each staple length were exported.

A greater proportion of the supply of upland cotton 1-inch or longer in staple, as compared with cotton shorter than 1-inch, was consumed by domestic mills in both years, and the proportion of annual takings remaining on hand in the mill carry-over was larger for cotton 1-inch and longer in staple than for cotton shorter than 1-inch.

The report says that domestic consumption of American upland cotton in 1930-31 and again in 1931-32 was less than for any preceding year since 1920-21, and that with the exception of that year, consumption in each of these years was less than for any other year since 1911-12.

* * *

Southern Textile Exposition October 15th to 20th

The management of the Southern Textile Exposition, which is to be held in Textile Hall, Greenville, S. C., during the week of October 15 to 20 inclusive, reports increasing interest on the part of prospective exhibitors, indicating that the show will be by far the most comprehensive ever staged. Hotels report all rooms reserved for that time; the exposition management will, as usual, make provisions for quartering visitors without reservations in leading Greenville homes.

IGEPON-T

IGEPON-A

The ideal scouring and wetting out agents.

More efficient than the best soaps and soluble oils.

GDC

For full particulars apply—

GENERAL DYESTUFF CORPORATION

230 Fifth Avenue, New York, N. Y.

NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

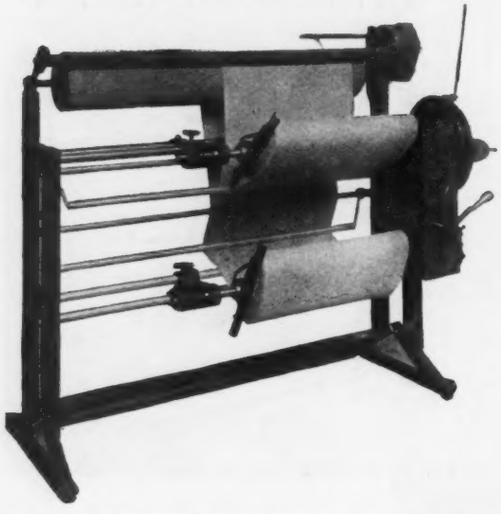
New Jacques Wolf Product

Jacques Wolf & Co., Passaic, N. J., have announced the development of a "one bath de-gumming and dyeing operation" for silk hosiery as follows: "This method requires one hour and increases the production in pounds per hour per day, at the same time maintaining the quality of the finished product. The process is based on the liberation of Sericin B fraction of silk gum, with powerful emulsifying, penetrating and leveling ability. It is the result of a research and perfecting period of two years. The boil-off oil used in the process contains properly buffered, peptizing salts and the conditioning agent used is the Wolf Monopole oil, which renders the dyed hose to the proper condition for boarding, especially those having tightly packed stitches of cotton or rayon in the foot and heel splicing."

* * *

New Measuring and Examining Machine

Hermas Machine Co., Hawthorne, N. J., have announced a new measuring and examining machine, which, it is explained, has a number of new features. Among these are the fact that



A new measuring and examining machine with unique features . . .

the difficulty previously involved in quite a bit of time being required to thread up is eliminated; and that slippage of the contact device of the measuring attachment has been prevented by a unique drop finger measuring attachment. The company states that tests show that 60 yard lengths have been measured from floor to floor in 120 seconds, including threading up of machine and removing reel or tube. An exclusive feature pointed out is that reverse will wind cloth back onto original tube or reel in either direction. The machine is operated entirely from the front for making threading and adjusting from one size container to another simpler; it will take cloth on any size reel, tube or bookfold; free-wheeling take-up is used, the manufacturers explain. The machine is mounted on concealed ball-bearing casters, and may be readily moved. It is equipped with variable speed drive, is available with or without table for examining, and in various widths with or without reverse wind.

* * *

New Ciba Colors

The Society of Chemical Industry in Basle (Ciba Company, Greenwich and Morton Sts., New York City) have recently issued circulars on their newest products:

Cibacete Yellows 5G powd. pat. and 2GN powd. pat. (Circular No. 401). Of these, the company states, the 5G type is especially suited for producing brilliant greens, with good fastness to light and washing. The 2GN type is of much redder shade, with greater fastness to light and washing.

Neolan Yellow BE pat. (Circular No. 403). This, the company states, is a particularly soluble and level dyeing type, possessing the fastness properties for men's wear. It shares with the other Neolans a general adaptability for the better classes of wool and worsted goods, where a good all-around fastness is necessary.

Chlorantine Fast Blue 10GL (Circular No. 404)—"the clearest and greenest shade of pure blue, possessing a high degree of light-fastness. It finds use in the production of bright greens on both cotton and rayon."

Chlorantine Fast Violet 8BLL (Circular No. 405)—"a bluish shade of violet, having very good fastness to light, in addition to the other good fastness properties common to this series of dyes. It is well adapted for dyeing viscose in sun-fast shades. It is to be noted that it is one of the few violet dyes that may be discharged to a pure white with hydrosulphite."

Brilliant Cyanine 6B (Circular No. 406)—"a neutral dyeing acid wool dye of brilliant royal blue shade, having good fastness to water, washing, perspiration and decatizing."

Rigan Green 3BL (Circular No. 407)—"especially valuable for dyeing streaky viscose, Bemberg or Chardonnet rayons, but reserving acetates."

Cibacete Red GGR powd. (Circular No. 408—"a new type of red for acetates. The shade is purer and it dy more level than the older types. This type is also dischargeable to a pure white with Decroline."

Direct Bronze G (Circular No. 410)—"a useful shade in a class of easily leveling dyestuffs for cotton or rayon. Dischargeable to a pure white."

Sample cards recently issued by the company are: Card No. 1040, Ciba and Cibanone Dyestuffs; Card No. 1108, Chrome Fast Colors on Wool Yarns; Card No. 1123, Pyrogen and Thiophenol Dyestuffs; and Card No. 1126, Neolan Orange 2R.

* * *

New Control Instruments

Two new Control Instruments have been developed by the Foxboro Company, Foxboro, Mass. Their appearance is practically identical but one controls temperature, the other pressure. The dial and knob on the lower face of the controller permits adjustment of the temperature or pressure within the range of the instrument. The indicating gauge above the adjusting knob shows the air pressure on the diaphragm motor of the control valve and also shows whether the valve is opening or closing.

On the temperature controller, a two-inch dial type thermometer may be installed in place of the air gauge. This thermometer is connected to the same bulb as the controller thus showing the temperature being maintained.

The pressure controller may be equipped likewise with a high pressure indicating gauge that shows the pressure being controlled. In either case, it is necessary to mount a valve motor air gauge on the air line to the valve

MATELLA *and* ENGLO

ENKA'S new fine multi-filament extra dull YARNS

TO meet the demand of fashion for fine multi-filament yarns in highly styled fabrics, Enka is adding to its range of popular sizes in bright and medium dull yarns two new high filament *extra dull* yarns—100 denier, 60 filament Matella and 150 denier, 90 filament Englo.

Perlglo, the finest semi-dull yarn made, is an Enka development and is available in 100 denier 40 filament and 150 denier 40 and 60 filaments. A loyal clientele who appreciate the unusual hand, lustre and appearance given to fine fabrics by the use of Perlglo yarn will now welcome Enka's development of these new high filament extra dull yarns.

American Enka Corporation

271 CHURCH STREET, NEW YORK • PROVIDENCE, R. I. • ENKA, N. C.

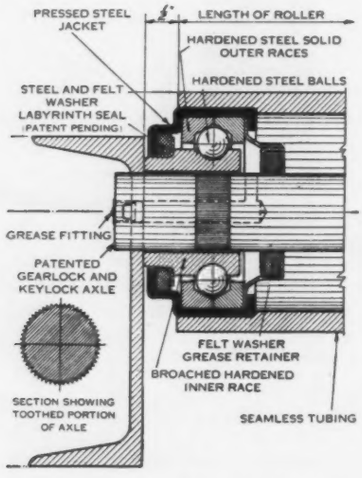
outside the case.

These new controllers have a universal case that is designed so that it may be either flush or surface mounted at the customer's discretion. The one case serves for either style without change. The connection may be either top, bottom or back and the choice can be made on the job when the instrument is being set up. All working parts are integral with or mounted on a cast aluminum base. By removing the set screw in the setting knob and removing the two screws shown on the face of the instrument, the entire case can be removed, leaving the interior open to inspection.

* * *

New Principle for Ball Bearing Conveyer Roller

Mathews Conveyer Co., Ellwood City, Pa., have been issued U. S. patent No. 1,943,998, covering, along with patent No. 1,893,574 with other patents pending, the principle of locking


PRESSED STEEL JACKET
LENGTH OF ROLLER
HARDENED STEEL SOLID OUTER RACES
HARDENED STEEL BALLS
STEEL AND FELT WASHER LABYRINTH SEAL (PATENT PENDING)
GREASE FITTING
PATENTED GEARLOCK AND KEYLOCK AXLE
FELT WASHER GREASE RETAINER
BROACHED HARDENED INNER RACE
SECTION SHOWING TOOTHED PORTION OF AXLE
SEAMLESS TUBING

Patented gearlock and keylock construction . . . . . .

the inner ball race of a bearing to its axle. The principle is known as the "Gearlock" feature, due to the fact that gear teeth on the inside of the inner ball race and on the axle are meshed, thus forming a positive lock, assuring a smooth, even bed of rollers on which objects are to be conveyed. The roller axle is held stationary in the conveyer frame by means of an upset key which fits into a corresponding slot in the frame rail; this construction, it is explained, prevents wear between the inner ball race and the axle, and between the axle and the conveyer frame rails. The Mathews labyrinth seal, it is pointed out, keeps foreign matter such as dust, dirt and grit, out of the bearing raceways (patent pending) to afford a smooth, long-life, protected ball bearing conveyer roller for gravity roller conveyer, belt, live roller, and other power driven conveyer units. The rollers have load ratings from 150 pounds per roller to 8,000 pounds per roller, from 2½-inch to 7⅝-inch diameter.

* * *

New Pontacyl Product

Pontacyl Violet 12B, an acid dyestuff which produces very bright bluish shades of violet, has just been announced by the dyestuffs division of E. I. du Pont de Nemours & Company. It is said to be bluer and brighter than Pontacyl Fast Violet 10B and as level dyeing as the Du Pont Anthraquinone Blues, possessing, in addition, the advantage of turning less red under artificial light than the majority of acid violets.

Pontacyl Violet 12B is recommended for use on wool and worsted yarn and piece goods, and also on pure silk when dyed in an acid bath. In addition, it is suitable for printing on wool. Acele, cotton and rayon effect threads are practically unstained; and combinations of wool and silk may be dyed to a uniform shade. The dyestuff is said to be very fast to ammonia, ironing, rubbing, stoving and water spotting, and shows good resistance to the effects of acid perspiration, steaming and cold water.

* * *

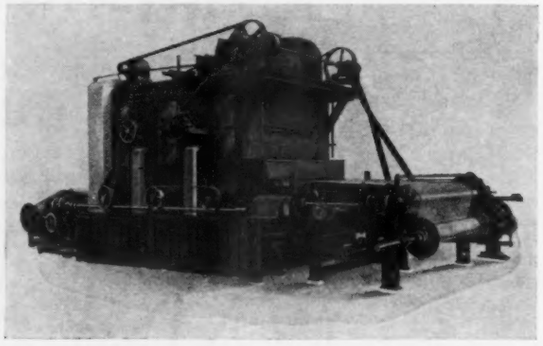
G. E. Announces Self-Supporting Panels for Small Circuit Breakers

Self-supporting steel panels for mounting small oil circuit breakers for isolated installations have been announced by the General Electric Company, Schenectady, N. Y. The equipment is suitable for use on ungrounded systems up to 2,500 volts. The oil circuit breaker interrupting ratings are 20,000 to 50,000 kva. The great advantage of this equipment lies in the fact that it can be connected up and put into operation immediately upon its receipt inasmuch as it requires no assembly of apparatus or adjustment of the breaker or mechanisms. All this work is done at the factory and the equipment is shipped in full working order. The new device consists of an isolated flanged steel panel, to which supporting feet have been welded, so that the panel when fastened to the floor becomes a self-supporting structure. In addition to the breaker and its operating lever, accessory apparatus such as current transformers, relays, etc., can be mounted on the panel. If desired, a metal guard can be obtained to enclose the back of the equipment from the top of the breaker tank to the top of the panel.

* * *

Zell Rayon Slasher

American Obermaier Corporation, 11 Forty-ninth Ave., Long Island City, N. Y., have announced the features of the Zell rayon slasher for which they are the selling representatives. It is pointed out that in this system the drying is done with hot air currents at a low degree of heat, with no high temperature drums being used. The manufacturers explain that in this machine the round shape of the yarn is retained; the breaking strength is improved, there are no tension variations in the sized warp, etc.



The new Zell rayon slasher which dries with hot air currents

* * *

Data on Texrope Sheaves

Allis-Chalmers Mfg. Co., Milwaukee, Wis., have prepared a revised leaflet No. 2134-A giving engineering data, such as sheave diameters, number of grooves, bores and other dimensions on Texsteel sheaves for Texrope drives.

* * *

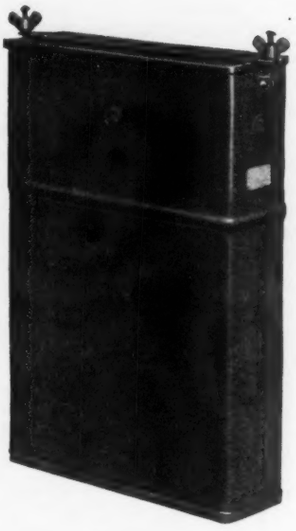
New Ball Bearing and Power Transmission Unit Catalog

The Fafnir Bearing Co., New Britain, Conn., have issued their new condensed catalog, No. 17, combining all of the information and industrial uses of radial ball bearings as well as the Fafnir power transmission line of wide inner ring and ball bearings. It gives complete information, interchangeability tables, dimensions, prices, etc., and treats of single row radial, double row, radial thrust, grease shield, felt seal, thrust wide inner ring, pillow blocks, lineshaft boxes and cartridges.

TEXTILE MILL INVESTS $2500 WILL SAVE

$800 to $1000 a YEAR

AN ENGINEERING study recently made in a New England textile mill indicated that at least $800 to $1000 a year could be saved in power costs by the use of capacitors to improve power-factor. Special lint-tight units, totaling 212 kv-a., were selected from the complete G-E line of PYRANOL CAPACITORS, and installed at a cost of approximately $2500. They will pay for themselves in 2½ to 3 years—a profitable investment.



G-E dust-tight Pyranol capacitor unit for use in dusty and linty locations. These capacitors are nonflammable and require little floor space.

More and more, power companies and industrial users of power recognize the benefits of improved power-factor, which reduces idle current, line loss, and voltage drop. This results in better performance of lamps and motors, and makes possible a greater utilization of generating and distribution equipment.

General Electric power-factor-improvement equipment — capacitors, synchronous condensers, synchronous motors — will effect economy and improve plant operation. Our engineers can assist you by making such studies as are necessary for the most practical solution of your power-factor problem, and in the selection of the proper equipment. To obtain their services, or an interesting publication on this subject, address our nearest office, or Dept. 6A-201, General Electric Company, Schenectady, N. Y.

360-84

GENERAL ELECTRIC

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Houghton Elects Officers

At the annual meeting of stockholders of E. F. Houghton & Co., Philadelphia, Pa., manufacturers of oils and mechanical leather goods, the following officers were elected: President,

Maj. Carpenter

Mr. Murphy

Louis E. Murphy; first vice-president and general manager, Maj. Aaron E. Carpenter; second vice-president and director of sales, George W. Pressell; secretary, A. E. Carpenter, III; and treasurer, Dr. R. H. Patch. The board of directors is composed of these officers and H. B. Fox, purchasing agent.

* * *

German Textile Machine Makers in Merger

Announcement is made of a merger of the following German textile machinery makers: Saechsische Textilmaschinenfabrik vorm. Rich. Hartmann A.G., Chemnitz, Saxony; Carl Hamel A.G., Schoenau, Saxony, makers of ring twisting frames, etc.; Saechsische Webstuhlfabrik vorm. Louis Schoenherr A.G., Schoenau, Saxony, makers of looms and finishing equipment; and Kettling & Braun, Crimmitschau, Saxony, makers of all kinds of textile machinery, especially along the finishing line. The affiliated firms have adopted the name of Texmaco. The United States representatives are the Hartmann Textile Machinery Co., 572-576 Davis Ave., Kearny, N. J. Plans are under way to determine whether this company will change its name to Texmaco, or whether a new American Texmaco will be organized in affiliation with it.

* * *

Diamond Chain Distributor

Rodney Davis, 624 Race St., Philadelphia, Pa., has been appointed distributor for Diamond roller chains, sprockets, couplings, and special chains for the Philadelphia district, by the Diamond Chain & Manufacturing Co., Indianapolis, Ind.

* * *

Union Special Appoints New Boston Manager

Union Special Machine Co., Chicago, Ill., have appointed Charles E. Stevens as manager of their Boston branch office, succeeding the late Joseph L. Stengel. Mr. Stevens is a native of Marblehead, Mass., and has been employed in the Union Special Boston office since 1906; he has a wide acquaintance among the industrial plants of the East.

* * *

Officers of Association of Cotton Textile Merchants

Magruder Dent was re-elected president of The Association of Cotton Textile Merchants of New York, at a directors' meeting held some weeks ago. Other officers for 1934 are: vice-president, Harry L. Bailey; treasurer, John C. Hughes, Jr.; and secretary, W. Ray Bell. S. F. Dribben, R. T. Stevens, and D. B. Tansill were appointed to serve with the president and vice-president as an executive committee. The following are directors to serve until 1937: John C. Borden, of M. C. D. Borden & Sons, Inc.; Saul F. Dribben, of Cone Export & Commission Co.; S. Robert Glassford, of Bliss, Fabyan & Co., Inc.; and David W. Jarvis, of Amoskeag Mfg. Co.

* * *

Fraser Moves Headquarters

J. W. Fraser, manufacturers' representative, has moved his offices from 603 Commercial Bank Bldg., Charlotte, to 124 Brevard Court, Charlotte, where he has display room and offices combined.

* * *

Elgin Softener Corporation Names New Representatives

The Elgin Softener Corporation, Elgin, Ill., announce the appointment of the L. A. Snider Engineering Service, 605 North Michigan Avenue, Chicago, as representatives of their entire line of water conditioning equipment in the northern Illinois and Indiana territories. Offices will be maintained in Indianapolis and Peoria as well as in Chicago for sales and engineering service of the Elgin equipment which includes boiler water deconcentration, continuous blow down and heat exchanger systems, boiler water chemical control, and industrial water softeners.

* * *

Textile Chemical Products Co. Moves into New, Larger Plant

Textile Chemical Products Co., Greensboro, N. C., recently moved into a new plant at East Washington and Lyndon Sts., Greensboro. The offices continue at 805-806 United Bank Bldg. The new plant is a four-story building, with 20,000 square feet of floor space, which is being utilized for manufacturing and storage. Additional equipment, including sulphonating and blending kettles for manufacturing sulphonated and blended textile oils and tallows, is being installed; also additional dry mixers for preparing dry cotton sizes and dry rayon throwing sizes. The company is adding a number of items. They manufacture a complete line of textile soaps, under the name of Texchem textile soaps, including neutral olive flakes, olive bars, coco white flakes, palm flakes, tallow flakes, and two scrubbing powders; and also a number of specialty soaps for the woolen trade and the rayon dyeing and finishing trade. The company also makes Texchem rayon, acetate and Bemberg warp sizes, and throwing sizes and throwing emulsions.

The company's staff was recently enlarged by the addition of Frank P. Morton, formerly of Charleston, S. C., who is working partly in the plant office and partly on outside sales; also Alfred R. Macormac, who for four years has been instructor in textile chemistry at Clemson College, who will

New Plant of Bahan Textile Machinery Co.

This is a view of the new plant recently occupied by the Bahan Textile Machinery Co., at Greenville, S. C. . . . . .

devote his time to service and experimental laboratory work, being assisted by Harold G. McCormick, production control chemist. Plant production continues under the management of William H. McCormick, Jr.

* * *

C. P. Gulick Again Heads Sulphonated Oil Makers

At a meeting of the Sulphonated Oil Manufacturers Association, held recently at the Hotel New Yorker, New York City, C. P. Gulick, president of the National Oil Products Company, was re-elected president of the association. Vice-President, C. M. Braham, of the Arkansas Company, Inc., and Secretary - Treasurer, H. B. Sweatt, were also re-elected.

Mr. Gulick

The following were elected Directors: C. P. Gulick, V. H. Berman, J. G. Nathanson, C. M. Braham, D. S. Whiteman, H. B. Hooper, H. T. N. Smith, F. C. Scholler, John C. Wolke, C. D. Marlatt, A. E. White, and G. J. Desmond. At a meeting of the board of directors the following executive committee was elected: C. P. Gulick, C. D. Marlatt, V. H. Berman, C. M. Braham, and J. C. Wolke.

* * *

New Gasket Type Drop Forged Pipe Coupling

The Champion Machine & Forging Co., 3695 East 78th St., Cleveland, Ohio, have announced a new positive seal pipe coupling for joining of straight plain end pipe without grooving, threading, beveling or upsetting the ends, no extra finishing operation being necessary. The gasket is designed to provide a double seal equally effective against pressure and vacuum. Two special steel re-inforcements 180 degrees apart on the gasket, protect the gasket from a pinching action of the two halves of the coupling when being assembled on the pipe. The coupling consists of five parts: two half coupling sections containing gripping devices, one gasket with metal protected sections and two bolts. The couplings are drop forged and heat treated and assembled into half coupling sections so as to become integral with the coupling itself. Couplings have been assembled on pipe and tested up to 4,000 pounds per square inch, it is stated. The coupling, it is pointed out, provides strength in tension sufficient to meet all strains during assembly of the pipe line and while the line is under pressure. The manufac-

IT'S ECONOMY TO SHIP TEXTILE PRODUCTS in STRONG LIGHT WEIGHT H & D Corrugated Fibre SHIPPING BOXES » » » »

REDUCE your shipping costs! Whatever the textile products you manufacture—wherever you ship them—there's an H & D box to carry them safely and economically. H & D textile cases come in all sizes to fit all products and conform to all freight, express and truck regulations. They combine light weight with extreme convenience and give 100% protection. H & D box Factories are located at strategic points throughout the country. No doubt there's a factory within "hailing distance" of your plant.

THE HINDE & DAUCH PAPER COMPANY
454 Decatur St. Sandusky, Ohio

NRA MEMBER U.S. WE DO OUR PART

HINDE & DAUCH *Engineered* SHIPPING BOXES

LIGHT WEIGHT » DURABLE » DUST-PROOF

H & D FACTORIES ARE AT YOUR SERVICE IN
BOSTON, RICHMOND, BALTIMORE, PHILADELPHIA, NEW YORK, BUFFALO, CLEVELAND, SANDUSKY, SAINT LOUIS & KANSAS CITY IN CANADA, TORONTO & MONTREAL

turers point out that with this coupling joints may be effected by unskilled labor; may be broken down and made up again any number of times without impairing the efficiency; and may be re-assembled on the same pipe or new pipe with no inconvenience.

* * *

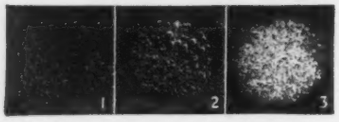
Dronsfield Issues New General Catalog

Dronsfield Brothers, Ltd., Atlas Works, King Street, Oldham, England, have issued their 15th Edition General Catalog, which is offered not only as a machinery catalog as such, but as a text book for the cotton and woolen spinning trades. It contains descriptive material on the company's broad line of textile equipment. A new feature, in the form of a quantity list, has been compiled to assist mills in preparing the necessary data for the equipment of a mill. The new patent Autofeed "Needle-Point" grinder is described in this new edition. The company has designed a new patent cork roller grinding lathe, No. 181, to provide means for grinding cork rollers in the mill, and this is described also in the new catalog.

* * *

Microscopic Pictures of Rust Removal

The accompanying illustration is submitted to show a microscopic "motion picture" of rust removal. The tests and microphotographs were made by the research engineers of the Brush



Laboratories of Cleveland. No. 1 shows the virgin rust. No. 2 shows a drop of Rust-I-Cide at work, indicating the bubbles being formed while the rust is being dissolved. No. 3 shows the metal 10 minutes after the drop of Rust-I-Cide was applied, with the metal clean and no traces of rust. The product, used before re-painting rusted metal and for cleaning up bright metal on which rust spots have formed, is manufactured by The Rust-I-Cide Products Co., 1933 E. 19th St., Cleveland, Ohio. It is said to be non-poisonous and harmless to the hands.

* * *

Johnston Represents Philadelphia Metal Drying Form Company

F. K. Johnston has been appointed by the Philadelphia Metal Drying Form Co., 8th and Columbia Ave., Philadelphia, Pa., as their representative for Tennessee, Georgia and Alabama. His offices are in the Provident Bldg., Chattanooga, Tenn.

Bauer is Merchandising Manager for Manhattan V-belts

Charles H. Bauer has been engaged as merchandising manager of the V-belt department of The Manhattan Rubber Mfg. Div., Raybestos-Manhattan, Inc., Passaic, N. J. Mr. Bauer, with long experience in this specialized field, enjoys a wide acquaintance with distributors throughout the United States, Canada, Mexico, and the West Indies.

* * *

Arbitration Council Activities

Increasing effectiveness of arbitration in the settlement of trade disputes is reported by the General Arbitration Council of the Textile Industry. A summary of activities during 1933 submitted by Frederick A. Colt, secretary, to George A. Sloan, chairman of the Council and president of the Cotton-Textile Institute, discloses not only an increased number of direct adjustments through arbitration proceedings, but also many settlements effected without hearings because an approach to arbitration had promoted willingness of disputants to reach speedy informal adjustments.

The formal arbitration proceedings involved claims ranging from less than $1,000 to a recent one amounting to more than $60,000. Practically all of the awards represented unanimous decision of the arbitrators. In some cases with very small amounts at issue, arbitration was agreed upon because of the principle involved rather than the money difference between the parties to the controversy.

Negotiations for arbitration, during the year, in practically all controversies based on additional charges due to processing and floor taxes, also increased cost of NRA operation resulted in informal settlements. Correspondence between the Council and applicants for arbitration in these and numerous other cases is acknowledged to have been effective in promoting settlements without the necessity for hearings. Cases going into arbitration generally were confined to disputes about the element of time in delivery and differences of opinion concerning the quality of the merchandise.

Enlargement of trade association membership in the Council also has encouraged wider use of its facilities and a more general acceptance of arbitration in preference to litigation. Ten associations now have membership, extending Council activities into trade groups beyond those formerly represented by what might be termed the primary market organizations. The latter are the Cotton-Textile Institute, American Cotton Manufacturers Association, National Association of Cotton Manufacturers, Association of Cotton Textile Merchants and Textile Fabrics Association, which with the National Association of Finishers of Textile Fabrics, and the Textile Brokers Association were original members. Recent additions to membership are the International Association of Garment Manufacturers, National Rayon Weavers' Association, and Cotton Yarn Merchants' Association.

In his report, Mr. Colt emphasizes that wider acceptance of the principle of arbitration has also promoted a spirit of mutual concession which speeds proceedings and largely preserves good will in the settlements effected. The unbiased character of the Council's procedure has become generally recognized, Mr. Colt says, and awards have been accepted, on the whole, as satisfactory solutions of controversies.

Adjustments on the basis of arbitration have effected large savings in time and in litigation costs for the parties involved.

* * *

New Mercerization Theories

That mercerization of cotton is the result of a physical, and not a chemical, change in the fiber is indicated by a scientific study of the problem by Prof. Wilder D. Bancroft of Cornell University and John B. Calkin, a fellow of the Textile Foundation. Their important study has not been completed, but a summary of their experimental work, published in the March number of Textile Research, explodes a number of theories that have been advanced by other scientists as the cause of mercerization, among them the claim that definite chemical compounds in mass are formed. The authors of this study of "The Action of Sodium Hydroxide on Cellulose" have found many indications that mercerization produces a physically changed fiber which has an increased absorption surface, that takes up more sodium hydroxide, dyes, etc., from solution than the native fiber.

The same number of this official magazine of U. S. Institute for Textile Research contains a report on "The Sulfonation of Benzoic Acid," this being the first of a series of studies on the orienting influence of the benzene ring by John S. Reese IV, a Textile Foundation fellow. An article reviewing the plans for a research institute as formulated in 1930 by the promoters of U. S. Institute for Textile Research is contributed by C. H. Clark, secretary of the Institute. A regular feature of the magazine is an abstract section covering textile research throughout the world.

Poster for National Cotton Week, May 14-19

America's interest in National Cotton Week, demonstrated by nation-wide observance during the past three years, is symbolized in the official poster designed for the 1934 observance, May 14 to 19. In producing the new poster the Cotton-Textile Institute has effected color and pictorial treatment reflecting the public's support of the Administration's recovery program.

"Uncle Sam", with a smile of confidence, is shown placing on his lapel a Blue Eagle button bearing the "Code 1" notation. The color treatment of the poster is red, white and blue. Its slogan is "For Everybody's Needs", emphasizing both the constructive significance of Cotton Week to business generally, in keeping with the Administrative promotional effort, and the universal service of cotton. Printing of the full size poster is under way and 100,000 copies will be ready for distribution and display appropriately well in advance of the observance.

National Cotton Week has established itself as the occasion for launching the Spring and Summer seasons in various mercantile businesses in which cotton goods are basic. One of the features of the event is the stimulation given to seasonal advertising and promotional activities. Estimates place the expenditures at over $2,000,000 for advertising and other sales efforts incidental to the 1933 observance of National Cotton Week. Various media are used by the cotton manufacturers, wholesale and retail distributors, and affiliated interests.

* * *

Cotton Consumption Largest in Four Years

Domestic mill consumption of cotton the first five months of this season totalled 2,416,000 bales or the largest for that period since 1929-30, says the Bureau of Agricultural Economics in its current report on world cotton prospects.

The bureau expects that the figures on mill consumption in January will be much larger than in December since there was a marked increase in sales of cotton textiles in January and because of the fact that the 60 hour maximum of weekly activity which was in effect during December under the NRA code agreement was in most sections of the industry discontinued after December.

The cotton textile situation in continental Europe was little changed in December from the preceding month, and mill activity in the Orient, particularly in Japan, continued at "very high levels," the bureau says.

Buy Your Window Shades in Cans

at 1-2c Per Square Foot!

SOLVE the expensive problem of eliminating glare and heat from factory windows and skylights thru the use of SKYCO NO-GLARE, the sky-blue liquid which when painted over glass filters the fierce rays of the sun—shutting out *all* of the glare and a *lot* of the heat, yet it admits 94% of the light. The cost is only about ½c per square foot of glass covered.

For ten years No-Glare has served many of our largest industries, saving them hundreds of thousands of dollars in expensive window shades. No-Glare has never been successfully imitated. If you have tried substitutes and been disappointed — try the *genuine*. If it does not live up to our claims you may return it at our expense.

The action of No-Glare is simple. It filters out the infra-red sun rays—that part of sunlight which produces heat but not light —and allows 94% of the natural light to flow through with restful diffusion.

No-Glare is easy to apply either to the inside or outside of the glass and will stay on until removed with brush and warm water. Let this economical and effective product solve *your* problem. Use the coupon or write for a 1-gallon trial can on a money-back basis.

Try NO-GLARE at our Risk

Write or Use Coupon

The SKYBRYTE Co.,
1929 E. 19th St., Cleveland, Ohio.

Gentlemen:

Enclosed find trial order of 1-gallon of SKYCO NO-GLARE at $3.50. It is understood that if we are not satisfied we can ship it back collect and our money will be refunded.

Name of Company .....

Address .....

PERSONAL NOTES
about Men You Know

W. D. CARTER and LUTHER H. HODGES recently received promotions in the executive personnel of The Carolina Cotton & Woolen Mills Co., Spray, N. C. Mr. Carter was made president, and Mr. Hodges vice-president and general manager, these promotions coming as a further step in re-organization which began with the appointment of these

Mr. Carter

Mr. Hodges

two executives as joint general managers of all operations of the company. Subsequently, H. P. SHEDD resigned as president, to devote his entire time to the position of vice-president and general manager of Marshall Field & Company, Wholesale. Upon his resignation, the promotions of Mr. Carter and Mr. Hodges were announced.

Mr. Carter has been with the Carolina Cotton & Woolen Mills since 1906, starting as stock receiving and shipping clerk. From 1919 to 1933 he was manager of the Nantucket and Lily Mills of the company; and has been company vice-president for the last four or five years.

Mr. Hodges has been with the company continuously since 1919, after leaving the Army. He was assistant to the late L. W. CLARK, general manager of the Spray and Draper plants, until Mr. Clark's death in 1932; from that time until 1933 Mr. Hodges handled the duties of the general manager's office. Previously, Mr. Hodges had worked in 1910 and 1911 in the general office as office boy, later being in the napping and packing departments of the American Warehouse and in the spinning room of the old Leaksville Cotton Mill.

H. RAIFORD GAFFNEY is now assistant general superintendent of The Sibley Mfg. Co., and Enterprise Mfg. Co., Augusta, Ga., with which he has been associated in another capacity for some time. D. R. SENN is general superintendent.

HUGH M. COMER, vice-president of the Avondale Mills, Sylacauga, Ala., is serving as a member of the Industrial Advisory Board of the National Recovery Administration, and will be located in Washington for several months. His appointment was made by PIERRE S. DUPONT, chairman of the board.

JOHN F. FOWLER has been promoted from executive vice-president to president of the Cartersville Mills, Cartersville, Ga., manufacturers of knitted underwear, etc. He has been with the organization since its inception about 15 years ago.

H. H. ILER has been promoted to the position of plant engineer at the Union Bleachery, Greenville, S. C., where he has been mechanical superintendent for several years. Mr. Iler is this year president of the Southern Textile Association, the first mechanical department representative to hold this office. P. L. CAMPBELL has been promoted to mechanical foreman at Union, from second hand; and has two second hands, R. W. SCHENCK and H. E. BATSON. R. L. AIKEN is assistant engineer and draftsman. The department has a crew for experimental and construction work, consisting of a machinist and two mechanic assistants.

Mr. Iler

J. R. FEDERLINE, JR., for a number of years overseer of spinning at the Lanett Mill of the West Point (Ga.) Mfg. Co., at Lanett, Ala., has become superintendent of carding and spinning at the Aiken Mills, Bath, S. C. D. A. PURCELL is in charge of weaving at this plant.

H. T. ROBERTS has been promoted to overseer of spinning at the Lanett Mill, Lanett, Ala. He has been second hand for a number of years.

MARION M. WIKLE, formerly superintendent of the Dadeville (Ala.) plant of Alabama Mills, Inc., has become overseer of slashing at the Lanett Mill, Lanett, Ala. J. FLOYD CHILDS is overseer of weaving.

HOMER L. PRUITT, formerly overseer of weaving at Lanett Mill, Lanett, Ala., who recently became superintendent of the Adams-Swirles Cotton Mill, Macon, Ga., has resigned that position and is succeeded by W. R. MCELVEEN, recently of the Southern Mfg. Co., Athens, Ga., who formerly held the position at Macon to which he now returns.

W. B. DIAL has become second hand in carding at the Pepperell Mfg. Co., Opelika, Ala.

GEORGE D. SIMPKINS, formerly overseer of carding, spinning, twisting and winding and spooling at the Dover Mills Co., Shelby, N. C., has become general overseer of The Sellers Mfg. Co., Saxapahaw, N. C.

LLOYD OTT, formerly at Graniteville Mfg. Co., Graniteville, S. C., has become overseer of carding at the Langley Mill, Langley, S. C., succeeding J. L. BRANNAN, who accepted a position as assistant superintendent at the Eagle and Phenix Mills, in Columbus, Ga.

A. R. MARLEY has been transferred from the Erwin Cotton Mill Co. plant at Cooleemee, N. C., to the superintendency of Erwin Mills Co. No. 6, at Durham, N. C. He is a graduate of the North Carolina State College Textile School.

T. N. LETLOW has become foreman of slashing at the Dadeville (Ala.) plant of Alabama Mills, Inc. He was formerly at the Pepperell Mfg. Co., Opelika, Ala.

JOHN W. WOODWARD has become overseer of carding at the Edwards Mfg. Co., Augusta, Maine, succeeding R. K. RUDICIL. Mr. Woodward was overseer of carding of the cotton division of Pacific Mills, Lawrence, Mass., for 16 years prior to the discontinuance of the cotton division in Lawrence.

W. E. ELLENBURG, formerly of Meridian, Miss., but more recently with the Lanett Mill, Lanett, Ala., has become second hand in carding with the Goodyear Decatur Mills, Decatur, Ala.

Obituary Items will be found on page 69 of this issue.—Editor.

SPINNA CALF

"Cannon Towels stay on the job and in service longer —take all sorts of punishment."

—say the Cannon Mills, and show above what they're talking about. Towel strength and durability begin, of course, in well spun, strongly spun yarn. It is a significant fact that Spinna Calf is the predominating choice of Cannon Mills for practically all their spinning roll covers. The Cannon choice is typical of leaders in the textile industry.

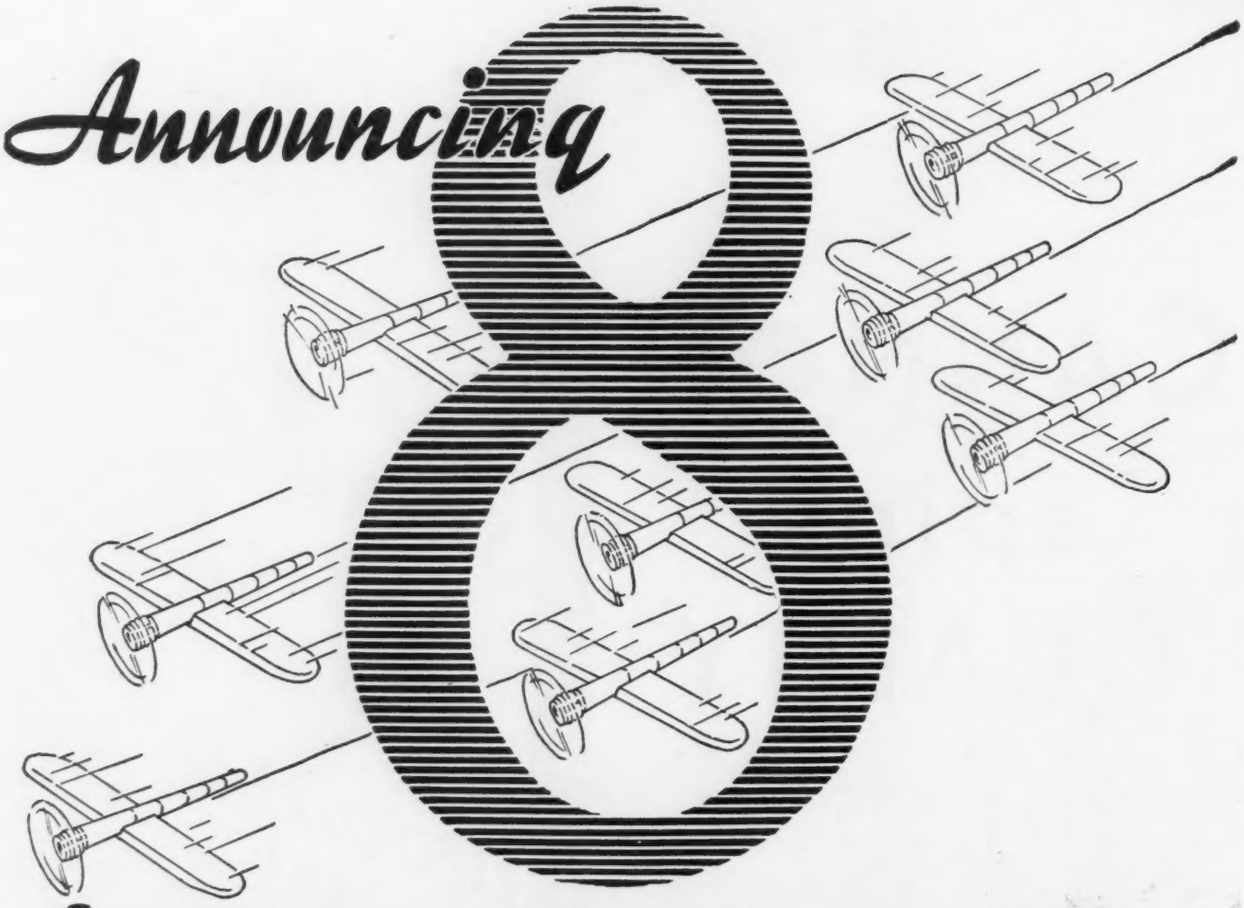
A. C. LAWRENCE LEATHER COMPANY

Specialists in Textile Leathers

Boston, Mass. Peabody, Mass.
Greenville, S. C.

A. C. LAWRENCE LEATHER CO. BOSTON SPINNA CALF

Announcing



Important improvements *giving greater* SPEED *and* ACCURACY *to*

the new TYPE K *Bobbin Stripper*

Never has real mechanical efficiency, promising lower operating cost, been so eagerly sought by those responsible for profits.

That is why this Terrell announcement is so timely.

The new Type K Bobbin Stripper offers an opportunity to cut bobbin stripping costs materially by replacing less efficient equipment with this new, faster, more accurate machine.

In this new machine, Terrell engineers offer 8 important improvements, which give it greater accuracy and simpler operation . . . and make possible efficient cleaning of 100 to 120 bobbins a minute.

Improvements Embrace

(1) A New Pull Head Stop Assembly of simpler operation and adjustment; (2) a more efficient Pull Head Assembly; (3) an improved Wiper Assembly; (4) a Stripper Blade Assembly of extraordinary precision, which prevents marking of bobbin barrels; (5) a Plunger Assembly, of remarkable accuracy, that cannot split a bobbin barrel under any condition; (6) an Adjustable Push Head Assembly, which eliminates the need for extra parts when changing from one bobbin length to another; (7) a new Clutch Guard with improved Starting Lever Bracket to provide for mounting the guard for both belt and motor driven machines; (8) longer Stroke Bed, and a change in the design of Crank Guards, which makes it possible to clean bobbins of 9½" barrel length.

Send for bulletins describing these new Type K improvements

THE TERRELL MACHINE CO., INC. CHARLOTTE, N. C.

MR. LUTHER PILLING, Danielson, Connecticut, *Representative for* N. Y., N. J., Pa., New England States, and Canada

GEO. THOMAS & CO., LTD., Manchester, England, *European Agents*

Obituary

IRA B. GRIMES, vice-president of the Callaway Mills, LaGrange, Ga., and one of the outstanding textile operating executives of the South, passed away at his home in LaGrange on Thursday night, February 22, following a sudden heart attack. Mr. Grimes was vice-president in charge of manufacturing for six plants in the Callaway group of mills including the following: Elm City, Hillside, Unity Cotton, and Calumet, at LaGrange, and Milstead, at Milstead, Ga., and Calumet, at Hogansville, Ga.

Mr. Grimes

Mr. Grimes was 53 years of age at the time of his death. He is survived by Mrs. Grimes, a daughter, Miss Mary Grimes, a son, Ira B. Grimes, Jr., a sister, Miss Beulah Grimes, of LaGrange; and two brothers, Oscar D. Grimes, vice-president and general manager of the Athens (Ga.) Mfg. Co., and Marion T. Grimes, agent, Chicopee Mfg. Corp., Gainesville, Ga. Mr. Grimes' father, the late P. M. Grimes, along with the late George W. Murphy, Sr., and the late C. E. Skipper, of Lancaster, S. C., and L. B. Foster, superintendent, Duck Mill, U. S. Penitentiary, Atlanta, Ga., was one of the pioneer weaving superintendents of the South, these gentlemen removing to the South during the last years of the past century to assist in the development of the then fast-growing young southern textile industry. The elder Mr. Grimes was superintendent of the Milstead (Ga.) Mfg. Co., one of the first mills under the management of the late Fuller E. Callaway, Sr.

When the Callaway interests planned the erection of the Elm City Cotton Mills at LaGrange, in 1907, Ira B. Grimes, then at a small mill in Hartwell, Ga., was selected as superintendent, and, until his death, retained his connection with the Callaway mills, with greater responsibilities being added from time to time until he filled the position which he occupied at his death. After a number of years as superintendent at Elm City, he was placed in charge also of three other mills of the organization—Unity, Hillside and Milstead—and later the supervision of the two Calumet plants at LaGrange and Hogansville were added to his duties.

Funeral services were held on Saturday morning, February 24, at the First Methodist Church in LaGrange, of which Mr. Grimes was a member. Interment was in LaGrange.

Following the services it was learned that the directors of Callaway Mills had presented to Mrs. Grimes in fee simple the home which she and Mr. Grimes had occupied practically since his first connection with the organization 24 years ago.

Fuller E. Callaway, Jr., treasurer of Callaway Mills, has assumed the duties of Mr. Grimes in connection with the plants at LaGrange. He will have as an assistant in this work Perrin N. Collier, who for about two years has been connected with the Valway Rug Mills plant, in LaGrange, and who has also for some time had supervision of the company's Truline, Inc., plant at Roanoke, Ala.

M. M. Trotter, vice-president and manager of the Manchester (Ga.) plant, has been placed also in charge of the Calumet Hogansville plant and the Milstead plant.

Boyd N. Ragsdale, formerly vice-president and general superintendent of the Unity Spinning and Oakleaw plants, has been made personnel manager for all of the Callaway plants.

WALTER DABNEY PHILLIPS died at his home in Scarsdale, N. Y., on January 31, after a prolonged illness. Mr. Phillips was manager of The American Diamalt Co., Cincinnati, Ohio, a subsidiary of The Fleischmann Co., in 1908 when Diastafor was introduced to the textile industry in the United States and Canada by that company. Later, the Diamalt Company was taken into the Fleischmann Co., which eventually became Standard Brands Incorporated. As manager of The Diamalt Company, and later vice-president, which connection he held almost up until his death, Mr. Phillips was largely responsible for the introduction and continuous sale of Diastafor since 1908. He had many friends and acquaintances in the textile industry.

WILLIAM A. SCHOENHEIT, 64, president of the Spray (N. C.) Cotton Mills, died at his home in Asheville, N. C., on January 17. He is survived by a son, DR. EDWARD SCHOENHEIT, of Asheville; three sisters and a brother, HARRY SCHOENHEIT, of Everett, Wash.

H. L. HOLDEN, 58, superintendent of the Jennings Cotton Mill, Lumberton, N. C., died on January 16 in a Lumberton hospital as a result of a heart ailment. He had been at Lumberton for about nine years. He is survived by Mrs. Holden, four daughters, and a son.

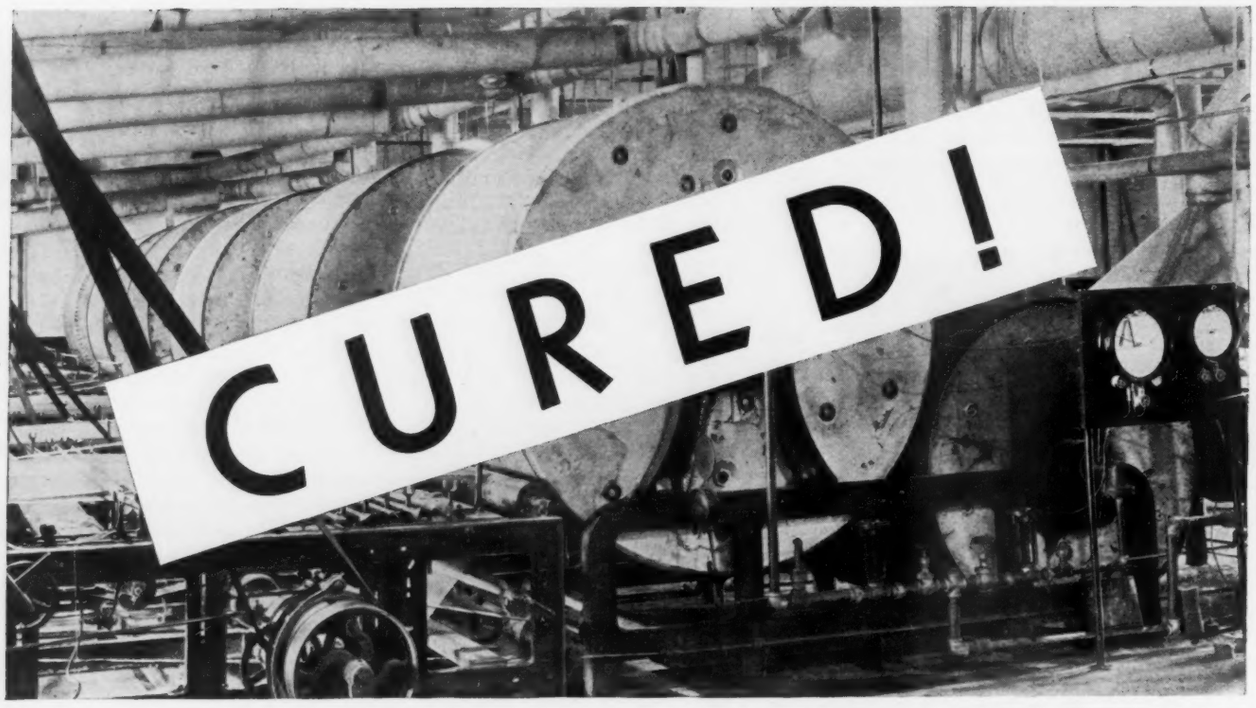
R. WESLEY REARDEN, overseer of weaving, Seminole Mills, Clearwater, S. C., died on December 29, at his home. He was 45 years of age, and was a native of Graniteville.

DR. WILLIAM R. CATHCART, technical director of the Corn Products Refining Co., New York City, and widely known throughout the textile industry, died at Asheville, N. C., on February 22nd, following a brief illness with which he was suddenly stricken while on a visit to the South. Dr. Cathcart was 65 years of age, and was a native of Columbia, S. C., and a graduate of the University of South Carolina and Heidelberg University in Germany. He is survived by his wife; two sons, Noble A. Cathcart of New York and Richard T. Cathcart, a student at Yale; a daughter, Mrs. Jonathan Daniels, of Raleigh, N. C.; two brothers, Dr. Robert S. Cathcart of Charleston and J. A. Cathcart, of Columbia; and a sister, Mrs. Washington Clark, of Columbia.

ROBERT T. GRANT, 64, southern representative of Titan Chemical Products Co., of Jersey City, N. J., died following a heart attack at his home in Charlotte, N. C., on February 1. Mr. Grant was at one time overseer of weaving for the Cannon Mills, Concord, N. C., for 10 years, and also at the Anderson (S. C.) Mills and the Dan River Mills, Danville, Va., in a similar capacity, before being connected with the United Chemical Products Corp., as salesman. He is survived by Mrs. Grant, a daughter, Mrs. Melville Boze, and a son, Harry J. Grant.

ROBERT S. MEBANE, SR., formerly president of the Republic Cotton Mills, Great Falls, S. C., passed away at his home in Pittsburgh, Pa., on February 25. He had for some time been secretary of the United States Chamber of Commerce in Pittsburgh. He was 64 years of age. Funeral services were conducted in Greensboro, N. C., on February 27. Mr. Mebane was active in the establishment of the mills at Great Falls, and served as president for many years. He is survived by Mrs. Mebane, a daughter, Miss Randy Mebane, of Pittsburgh; a son, R. S. Mebane, Jr., of Honolulu; his mother, Mrs. Julia Mebane, of Philadelphia; a brother, Hal Mebane, of Knoxville, Tenn.; and a sister, Mrs. Moreau Lebair, Philadelphia.

MRS. L. ERNEST WOOTEN, wife of L. Ernest Wooten, vice-president and southern manager of Lestershire Spool & Mfg. Co., died suddenly at her home in Charlotte on February 26, as a result of heart failure. Besides Mr. Wooten, a daughter, Mrs. Richard McMillan of Atlanta, Ga., survives.



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Foxboro engineered control *is more* than the application of instruments. It goes into the entire slasher operation with the view of giving a controlled, uniform warp of the best quality at the lowest cost.

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In addition to slasher control Foxboro has a complete line of Recording and Controlling Instruments and has applied them with success to practically every textile mill operation. Send your problem to us.

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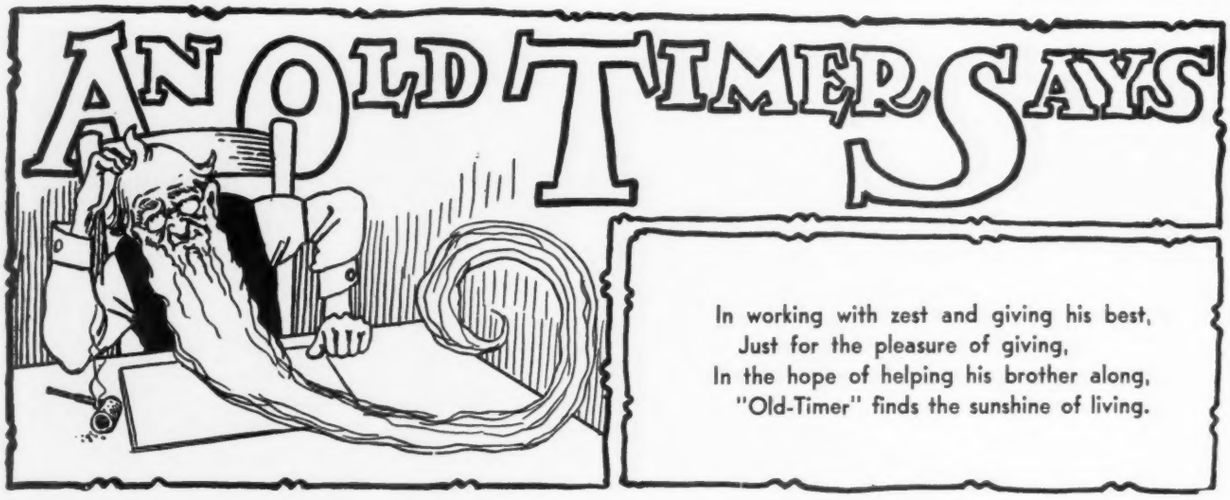

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

What's Your Answer to This One?

HERE Old-Timer poses a thought which we all would do well to ponder. The old gentleman has his own way of getting to his point—and we think the reader will agree that this message is full of good, common-sense, applicable to worker, operating executive, and the rest of us alike . . . .

(Note: Since this series is written in conversational style, it should be borne in mind that those paragraphs in regular type represent OLD-TIMER'S part of the conversation, and those in *italics* are JIM'S part.)

Well, for heaven's sake, OLD-TIMER, *what's the trouble now?*

Hello, JIM! Trouble, did you say? What do you mean—trouble? I am just about the happiest fellow you have run across lately.

Well, darned if you looked like it when I walked in. You were sitting there looking into the fire and did not even hear me when I approached. And now you say you are happy. Suppose you divide up a little of that happiness. But if I get any, I hope it does not give me that woebegone look you had when I came in.

You see, JIM, I was just trying to figure out this human nature stuff—that is, why we as overseers and superintendents act the way we do and why section men and operatives act the way they do. But it is absolutely beyond my comprehension. However, if they did not act the way they do—oh, well!, JIM, don't you see, you and I would be out of a job.

Isn't it a wonderful thing for you and me, JIM, that *people will not do what they are told to do?*

What in Heck are you driving at, OLD-TIMER? *You say it is a wonderful thing that people will not do what they are told to do. Are you sick or anything,* OLD-TIMER? *I'll admit you have blurted out some pretty raw statements the past several years in our conversations about overseers and superintendents, but I could usually connect a little common sense with most of them. Are you sure you are feeling all right?*

Sure, JIM, didn't I tell you I was happy? But there are just some things about human nature I cannot figure out. I just don't see any reason or common sense in some of the things human beings do. It looks to me like a little child would know better. In fact the child *does* know better. The grown person—the overseer or superintendent— the salaried man or wage earner in any line of work in the world—knows better.

In fact, the average operative (not necessarily the most intelligent) will answer one or two questions along this line that will soon show you he knows—

What line? What questions? If you are sure you are in your right mind, OLD-TIMER, *quit stalling and tell me what fool idea you have in your head this time.*

Hand me that tobacco pouch—

When did you change your smoking tobacco? But, Gosh, I don't see how that could have made you—

Cut out the burlesque or whatever you call it, JIM. I never was more serious in my life. This thing has been on my mind for several weeks. I have debated it with myself from every angle I could think of—

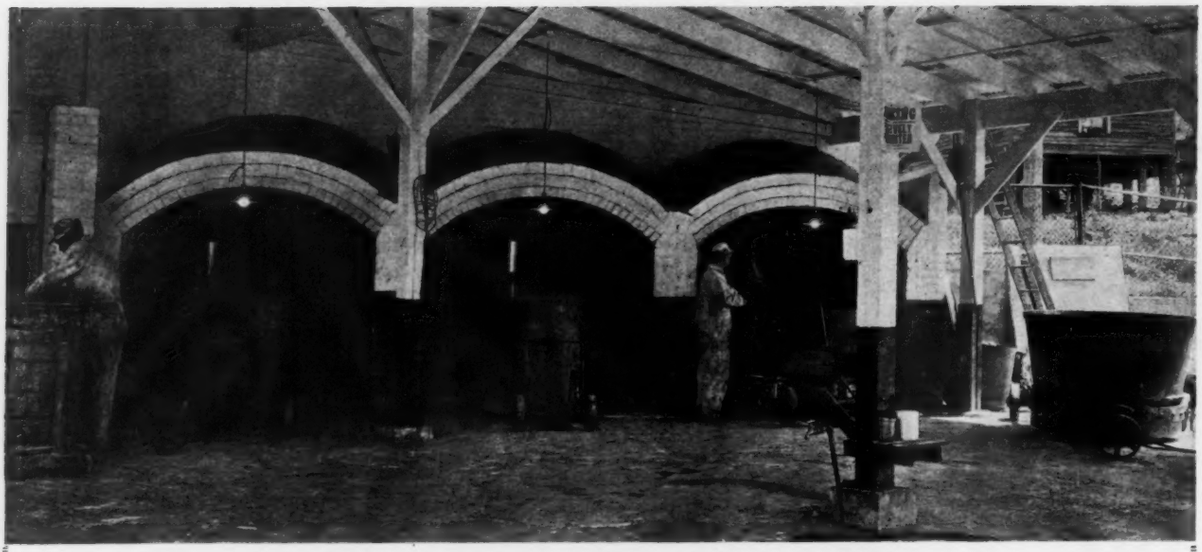
Oh yeah! Some of the fellows have told me that you have been going around talking to yourself here lately—

Shut up, will you? I tell you I am not trying to do any funny stuff and if you will give me a chance I will try to get the thought into that bullet-proof skull of yours.

I repeat, "It is a wonderful thing for you and me (and for a lot of other fellows) that people—men—human beings—supposedly intelligent human beings—will not do the things their employers tell them to do.

That is, they will not *continue* to do what they are told to do.

To express it in another way, JIM, they will not continue to carry out orders.



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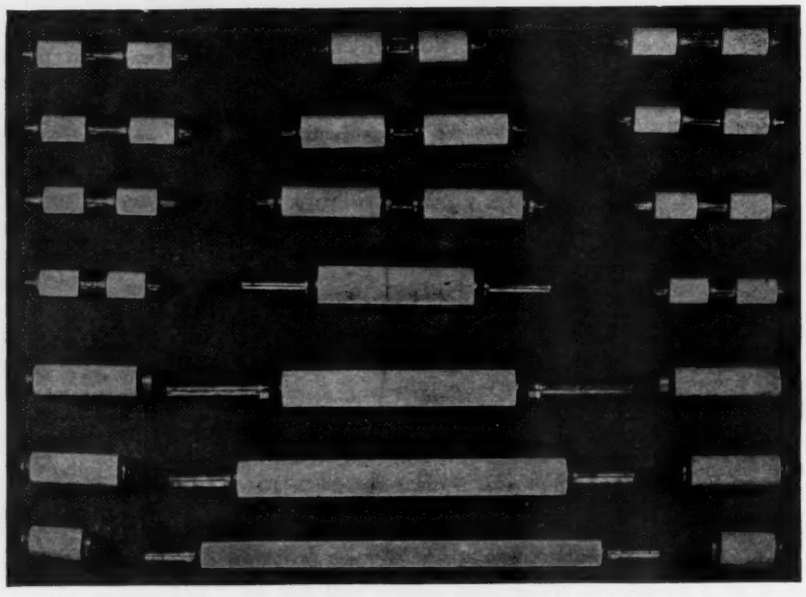

PHILADELPHIA FELT COMPANY

FRANKFORD, PHILADELPHIA, PA.

Let me make a rather radical illustration: Suppose I had the money to build a 50,000 spindle mill and suppose people *would* do what they are told to do.

Here is what should happen.

The mill is built. I am ready to start up. I advertise for help. Weavers, frame hands, spinners, doffers and all other help begin to show up at the office.

I tell them that I know they are sensible men and women and that they know that the better they run their machines the more money they will make, etc. I also explain that inasmuch as they know how the work should be done and inasmuch as I have confidence in them and know they will do the right thing—that I am not going to put any overseers or superintendents in there to give them orders (and make them carry them out) because they know what is right and what is wrong (which they actually do) and this will enable me to pay them 20 per cent more than any other mill is paying for the same work, because I will not have any overhead expense—no overseers or superintendents—to pay—

Well, I'll be doggoned, OLD-TIMER. *Blamed if I ever thought of it in just that way, but I see now why you said you and I would be out of a job. They (the mill owners) would not need us, would they?*

That's it, JIM. You are beginning to see, aren't you? You know some of the things they tried to start in Russia, with dreams of theoretical men who thought that people would do everything right if they were given a chance—no bosses—no capital (rich men)—no one owning property—no laws—no religion—just letting everybody be on the same level and the world would run like it was greased or something.

No, JIM, it won't work, and it never will as long as there are human beings. You laughed at me one time when I said, "You have got to make a man make money for himself", but I finally proved to you that although the statement sounded contradictory, still it was true.*

You have some grown children, haven't you, JIM? Well, I'll try to get my idea over to you by referring to your two sons.

I guess my sons are doing just about as well as the average young men, OLD-TIMER. *They have both been to textile school and they are respectable and have a fairly good start toward making mill men.*

Yes, yes, I know, JIM, but that is not the point. What I am trying to show you is that "If people (*continue* to do) what they are told to do"—

Won't you admit that your boys would have saved themselves many mistakes if they had only listened to Dad?

Did they not go on bull-headed and make the same mistakes that you made?

Did you not preach, argue, try to persuade them and do every other thing you possibly could to get them to do certain things that you had learned by or from experience was the best for them?

Sure! Sure! OLD-TIMER, *I see what you are driving at now. Gosh, isn't it fine that people have to have overseers and superintendents over them and just think, we make as much in a week as several operatives put together. Wow!* OLD-TIMER, *what if we had to work for $15.00 or $20.00 a week again?*

Now you are talking, JIM. Go on. Go on.

Well, the more I think about it the "gladder" I am that people will not do what they are told to do.

And I never could have sent my kids to college on $15.00 or $20.00 per week.

And our home—I'll never forget how proud Mamie (Jim's wife) was the day I brought the mortgage in, marked Paid. I'll tell you, Old-Timer, Mamie had fried chicken so many days hand running, after we got that mortgage paid, that I actually had all I wanted for one time.

Then we traded the flivver in for the big car—and you need not look at me like you think I bought the big car on credit. You know I didn't, don't you, OLD-TIMER, *and you know we will soon have the farm paid for where we can go when we get too old to work—*

And just think, if people would do what they are told to do, *I would still be working for $15.00 or $20.00—*

That will do now, JIM, you may rest awhile and be happy like you found me when you walked in tonight.

However, there are just a few more questions I will have to ask you before I get the full meaning of the idea over to you. You have part of the idea, JIM, in fact I think you understand fully just what I was driving at when I said, *"What a wonderful thing it is (for you and me) that people will not do what they are told to do."*

In fact, if people would only run their jobs like they would if they had their own money tied up in the job, we not only could pay much higher wages in salaries, but I would have the time to read all of the good books I've always wanted to read. All a fellow would have to do would be to sit in the office and hire another man when someone died.

Yes, JIM, I think you got part of the idea.

What do you mean: part of the idea?

I mean exactly what I said of course and do not know how to say it any plainer. When a man says "part" of anything he does not mean all of it. I said you got part of the idea.

Oh, well! Come on. What is the catch or joke or what-have-you?

Certainly, JIM. I merely wanted to be sure you were interested before I tried to get the rest of the idea over to you. You know that people always remember the things they are interested in much better than the things which are just told to them in regular conversation.

You are just like most all other human beings, JIM. You can always see things which apply to the *other fellow* and are usually blind to how it fits you personally.

Remember all those long articles which put up all the arguments I could possibly think of trying to get our readers to realize we were talking to *them* personally—how we explained that the average reader

---

(*OLD-TIMER's article on the subject, "You've Got to Make a Man Make Money for Himself" appeared in the September 1931 issue of COTTON. If the reader has retained his copy of that issue, he is urged to read this article again. If he has not kept the issue, this will serve as a demonstration of the value of retaining past issues of the magazine.—THE EDITOR.)

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Moccasin Bushings have made a large contribution to the success of many textile machines by solving the bushing problem once and for all.

Moccasin Bushings have a patented self-oiling feature. Specially treated white pine plugs, inserted in the bushing, carry oil in a continuous film to the bearing surface.

Friction, wear, loss of power, waste oil, dripping oil, dangerous hand oiling—all the disadvantages of the ordinary bushing are eliminated. Moccasin Bushings are notably long-lived—some having been in use for ten years without showing the least sign of wear.

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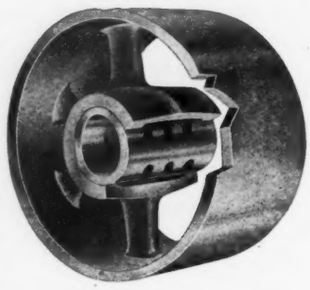

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With this amazing machine you can scrub your mill quickly . . . thoroughly . . . economically. You can scrub it the right way . . . a room at a time.

This *Finnell* deposits the scrubbing solution on the floor . . . the fast whirling, powerful twin brushes scrub loose the dirt, oil, grime . . . then a snap of the switch applies a powerful suction which lifts the water, dirt and all, into a tank, ready to be emptied wherever convenient.

Because this *Finnell* picks up the water immediately, the floor is dry almost as soon as the machine has passed over it. A further advantage . . . you can dispense with mopping, which is never really effective, and compared to one of these *Finnells* is no longer even cheap. Eight other sizes . . . large ones for open areas . . . smaller machines for congested spaces . . . a right size for any sized mill.

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FINNELL SYSTEM
ELECTRIC FLOOR MACHINES

always reads as if he were using that argument or reasoning to some other fellow—In fact many of them are thinking how well the reasoning applied to Tom or Charlie or some other fellow he knows—

Well, for goodness sake, OLD-TIMER, *that's enough. Quit beating the devil around the stump and come out with it. What is the part of the idea that I did not get?*

O. K., JIM, just one little short question will suffice, I think. You have just finished telling me what a wonderful thing it is that people will not do what they are told—and how strange it is that *they* have to have an overseer and a superintendent over them, etc.—

Have you got a boss, JIM?

Sure, I have, but what in heck has that—Oh, I see—

Yes, JIM, that is just what I wanted you to see. Human nature is a rather strange animal, isn't it?

* * *

Now, brother overseers and superintendents, what are you going to do about it? There is just a great big lesson in the foregoing conversation for you and me and every man on earth who is working for wages, salaries, commission or in any other way by which he gets his compensation. Can you really explain this strange freak of human nature which we are all familiar with and *guilty* of? Can you explain why your boy will not take your advice when if he only would stop to think he would realize Dad is talking to him for his own good; he would realize: "Dad wants me to be a success. Dad wants me to be a big man and wants to give me the benefit of the mistakes he has made so I will advance in business faster than he did."

Can you explain why the men you ask to do certain things will do those things a few days, weeks or months, and then the first thing you know the darned job is all gone to pot and you are compelled to go over the whole thing again with them?

And can you explain to me why you can see all of this in the people who work for *you* and then cannot realize that your boss sees the same thing in *you?*

Again, may I ask what are you going to do about it.

In the first place, it is hard to realize that all human beings are that way—but they are. Now, don't get huffy and say you are not, just be honest with yourself and try to find out how badly you are afflicted with the "disease" and make an honest effort to improve.

Remember, brother, it is the fellow who can realize his faults and then start in with a determination to eliminate all of them he possibly can, that is the fellow who is going to "beat the other fellow." He is the man who is bound to be the most valuable to his employer—he is the man who will finally hold the highest position and with that of course goes the largest salary.

Human nature is one of the most complicated studies we have and yet the most simple. And right there, JIM would answer: Yeah, there you go again talking two-sided.

But poor old JIM; he has gone fast asleep as he usually does and therefore I will ramble along without his interruptions.

I'll admit the sentence or statement just made does sound contradictory, but study it, analyze it, apply it to yourself and you will find it is true—too true for your own good. But you *can* do something about it, if you will. My earnest hope is that you will take the matter seriously and really try to do something about it.

Many more simple illustrations could be brought out to convince you that it is a serious matter in your life and my life—in every man's future—his chance for success. But, as my pen name signifies, I am an old-timer. I can't use a typewriter, and my fingers are tired from writing, so I am going to sign off and leave a thought with you that you probably never had before:

Isn't it a wonderful (?) thing people will not do what they are told to do?

Express Service Has 95th Birthday

Railway Express service in the United States will be ninety-five years old on March 4 and will observe its centennial on the same day in 1939, according to a recent statement of the Railway Express Agency.

The more than 50,000 men and women employed in the various nation-wide operations of that unique transportation system are now comparing present day conditions with those that prevailed when the "Original Expressman" started the first express company in the country in 1839.

Historical records show that William H. Harnden, conductor on an early day railroad in New England, gave birth to the personal service idea in express transportation, by carrying packages in his carpetbag between business men in New York and Boston.

Traveling between the two cities then was an arduous journey by a short railroad line, sound steamer and stage coach and the young man's enterprise was instantly accepted. His business grew so rapidly that he could employ others and had many competitors who laid the foundation of the several famous express companies of the pre-World War era.

The Railway Express Agency, now owned by the principal railroads of the country and operating over their 225,000 miles of lines, is the modern outgrowth of Harnden's idea. That company has offices in 23,000 principal cities and towns and handles well over fifty million shipments a year. In the maintenance of its collection and delivery of shipments at many of these points, it maintains the largest motor vehicle fleet under one management, comprising some 9,500 units.

Old Timer Shorts

Just think how much more the average overseer and superintendent could accomplish if they were not so darn afraid someone else would get the credit.

* * *

The Supreme Court says: "Good will is the disposition of the customer to return to the place where he has been served."

If you do your brother overseer a good turn he will very likely do you a good turn some day. Especially if you don't stop at just doing *one.* If your operatives are treated square and courteously, they may go away, but they will surely come back.

The Supreme Court was referring to something to sell like merchandise of some kind, but you have something to sell, brother—your services—the way you run your job. How are you selling yourself to your customers? Will they come back to be served (to work for you) again?

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HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

Putting Tallow on Shuttles and other Things

This man enlarges a question about greasing shuttles by giving some good practical points on the general care of the loom and its parts . . . .

EDITOR COTTON:

I am replying to "CONTRIBUTOR NO. 6300" who asked in the February number for opinions and experiences with reference to putting tallow on shuttles.

The practice of greasing shuttles with tallow, if carried out in a systematic manner, adds considerably to the life of shuttles.

Shuttle expense in some mills, to my own knowledge, has been cut from 40 to 60 per cent and I can easily imagine a situation where there is room for a still greater improvement.

In discussing the matter of using tallow on shuttles, it might be well to go into the care of shuttles in general as the primary reason for putting tallow on the shuttle is to prolong its life, but no amount of tallow will do very much good if the more important things are neglected.

In the first place, uniform reeds as to thickness or width of dent are most important. There is no standard in this respect between different reed manufacturers, and reeds with the same dents per inch, bought from different sources, may vary as much as .05-inch or 1/20th of an inch or more. It can readily be seen what this will do to the alignment of the loom when warps are changed, causing the shuttle to rub-board or plane off in the back. Reeds also must be well polished and rigid enough to prevent them from being deflected by the passage of the shuttle, as this will also wear away the shuttle. Mills should confer with their reed makers and determine what standard thickness to use regardless of the number of dents per inch, as you cannot tell when a different reed other than the one to which the loom was lined may be put on.

The matter of putting a new shuttle in the loom requires great care and accuracy and should never be done hurriedly. Each loom fixer should have an extra shuttle that can be used to run the loom in case other jobs on his section require his attention so that he would not have time to properly start the new shuttle at the time the old one gave out. However, this spare shuttle should not be left in the loom any great length of time. Examine the new shuttle, see that the spring and eye are tight and that the spring holds the bobbin straight, also look for bad places in the eye that could hang and break the filling.

Then tallow the shuttle with a good firm grade of country cake tallow, rubbing the tallow into the wood with the hands and leaving a little in each screw hole on both sides of the shuttle. The tallow in the screw hole may, in very rare cases, soften the wood around the screws, making it difficult to keep them tight. However, this trouble, in my opinion, is more than offset by the benefit derived from the tallow, as it gradually melts out from the heat of the shuttle, getting on the sides of the shuttle and on the leather binders, where it is needed.

Lining the Loom

It is not my intention to give a lesson in lining looms, as most good loom fixers know how this should be done. However, it might be well to enter a few words of caution in regard to accuracy.

Make the reed exactly square and line the box back and lay end as close as it is humanly possible to do so. Before the front box plate and binders are put on, they should be examined and rough or grit-embedded leather replaced with new leather, which also should be tallowed, as this preserves the leather and presents a smooth surface to the shuttle.

The manner of following up the new shuttle will determine, to a marked degree, its life. Let the second hand check the lining and then after the shuttle has run 10 or 12 hours, check it again and see that it is not wearing. If the second hand does not have the time to do this, then it appears that he is using too many shuttles. The overseer should check them, getting the numbers from the supply room, and the superintendent can get a lot of first hand information as to the care of his shuttles if *he* would look at a few.

Every shuttle should be examined and tallowed by the loom fixer one time each month. When this

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WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

is done, the shuttle should be smoothed up, and worn and bad leather removed, also any causes for excessive wear should be eliminated. This operation should also be checked to see that it is properly done. A great deal of checking will pay dividends in the shuttle bill. In some mills they have what they call "shuttle week" which is some specified week, such as the week containing the last Saturday in the month, in which to do this work.

The proper care of shuttles is reflected in the mechanical condition of the looms as some things that would ordinarily be left alone must be fixed to preserve the shuttle, thereby cutting down the stops per loom per hour and increasing production.

CONTRIBUTOR NO. 6307.

Explains about Setting Front Plate to Flats

On page 73, January issue, a writer took this man to task about his advocating "setting the front plate to the flats". Here is the reply . . .

EDITOR COTTON:

Let me, the very much maligned "CONTRIBUTOR NO. 6181", reply to my critics, on the basis of their letters, signed "CONTRIBUTOR NO. 6123" and "CONTRIBUTOR NO. 6278", on pages 73 and 79 of the January issue of COTTON.

Before taking up the point in question, let me salute "CONTRIBUTOR NO. 6123", who says he is a card man of experience. I want to tell him, as well as some of COTTON'S other readers, a story—and when I say story, I mean something that actually happened to me but will never happen again, I assure you.

I once worked in a mill where there were combers, and we were experimenting with doublers. The laps were very uneven and we had tried a good many different things in an effort to even them out, but with very little success. The overseer of the room suggested that we try setting the back roller 2¼-inch where I had set it to 1¾-inch, but I laughed and said, "'All of the books I have ever read are to the contrary."

He replied, "Everything you read in books is not so. *Try it.*" I did, and it actually helped. Of course I felt like two cents when I had to admit it. The real reason I did not want to try it was because I did not believe it would help. I think that is the trouble with "CONTRIBUTOR NO. 6123".

I do not believe he wants to take the trouble to try setting his percentage plate on the card to the flats, as I suggested, because he does not believe in it.

Everyone has different ideas. Some are good and some are not so good. I am not going to discuss card settings with these men any further, but I *am* asking them to go into the card room and get busy. Take off the percentage or front plate or topping plate or whatever they care to call it, by taking out the cap screws, and file the holes in the plate so it will go up or down, wherever it is desired to put it. I ask them to set this in the center of the flats for no other good reason than that I find the center is about the easiest place. You can set at the heel or toe, if desired, using a 5 or a 7-gauge in place of a 10. This is surely worth looking into, don't you think? If not, then why have these men taken the pains to write to COTTON? All I ask is that they give this a try, and let us have the results of their experiments.

Now, I notice also in the January issue that "CONTRIBUTOR NO. 6278" has taken occasion to write about this. He says that he does not think setting the doffer comb to a 34-gauge would increase the breaking strength. I ask him if the short—by that I mean very short—and fine trash will not have more opportunity to drop out when the doffer comb is set to a 34-gauge than they would if it were set closer; then if we get some of this out of the work, then why will it not help to increase the breaking strength? Every little bit helps and no point, however small, should be overlooked.

I have merely given my opinion as to what I think. I would try first and work from then on, as I have no hard and fast rule as to how I would set cards. I am willing and glad to try anything.

Last, but not least, I do not miss an issue of COTTON nor overlook anything contained in it. If I did, someone would hear from me pronto.

CONTRIBUTOR NO. 6181.

More About Back Alley Weaving

EDITOR COTTON:

I have been reading in the November issue the letter from "I. M. (MASS.)", commenting upon my letter in the June issue in which I expressed the opinion that weavers should spend most of their time in the back alleys. "I. M." not being able to agree with me on this point, and expressing the opinion that weavers should spend their time in the front alleys, did admit that there might be something to back alley weaving that he could not see through.

I would like to suggest to him and other readers, in order to find out what there is in back alley weaving, to ask the weavers to save all of the gouts, bad knots, kinks, etc., that come up in the warps for a week; also make a test of his loom stops for a week.

The kind of test we make is as follows: We secure plain white cards and write the following information on them:

Weak thread in body .....
Weak thread in selvage .....
Bad knots .....
Kinks .....
Gouts .....
Loose ends .....
Pick outs .....
Mat ups .....

Then we place about eight of these to a set of looms and ask the weavers to put a mark by the defect that causes the loom to stop.

We make this test on several sets of looms, because we have several warpers, spoolers and slashers.

If a reader will introduce this idea to his weavers and encourage them to try it for a while I feel sure he will see why I think weavers should spend most of their time in the back alleys. I know he will get better production and less seconds, because all of the filling defects which he mentioned in the November

issue will be found while the weaver is inspecting his cloth.

"I. M." also stated that some old men would probably apply the adage, "An ounce of prevention is worth a pound of cure." I think if he will follow my suggestion he will find that this old saying is largely true.

CONTRIBUTOR NO. 6234.

An Opinion on the Value of Bottom Clearers

EDITOR COTTON:

"J. R. (GA.)" should be commended and deserves a great deal of credit for bringing up his question as published in the February issue of COTTON. He wanted to know, "Do you think that bottom clearers on steel rolls of fly frames are essential or beneficial?" He asks whether it is better to allow this waste to fall to the roller beam to be wiped out at each doff, or to be collected on the clearers and removed at different times during the day.

This question is a deep one, and one that deserves much consideration, for fly waste will cause many evils.

Bottom clearers are both essential and beneficial, and to prove that this is true, just consider the amount of waste that accumulates on the top clearers. It is fair to assume that more waste will fall on the roller beam, for the reason of the matter's own weight. Again it is fair to assume that the top clearers do not collect 100 per cent of the foreign matter from the top rolls.

Therefore, we must admit that bottom clearers will not only accumulate more than the top clearers, but will also gather all dirt and fly which escaped the action of the top clearer.

Again, consider the amount of waste that accumulates on the bottom clearer on the slubber.

No one can deny that under-clearers will prevent steel roller lapping; that is proven on the drawing and slubbers.

The following should convert the reader in favor of under-clearers. Bottom clearers on fine and jack frames are picked or should be picked every hour at least. Save all the waste picked from the top clearers for a day only, look at the amount, and then ask yourself the following question:

If more waste falls to the roller beam than that accumulated by the top clearers, where does it go?

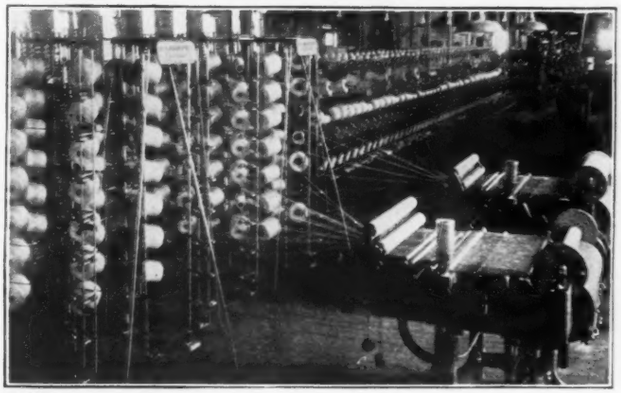
Waste is always falling down back in front of the frame and getting into the gears and rack.

Waste will clog the tumbler shaft on the American builder and cause a bad mess. In front it will gather on the flyers, bobbin and spindle gears. It is one cause of spindles sticking.

A small bit of waste will clog both the poker bar and rack on the English builder and will cause the frame to run over and under and break all the ends down in some cases. Now, under-clearers will not, of course, eliminate all of these evils, but in my judgment under-clearers help a great deal.

WASH (R. I.)

Why Stop Forty Ends to Clear a Single Yarn?



Why not Stop Just 1

Why continue with a slow, costly process for inspecting worsted yarns? Eye-inspection is never positive, — it depends on the human element for effectiveness. By this method, forty or more yarns are drawn from bobbins to jackspools at slow speed, *and all the ends stopped* when imperfections are broken out.

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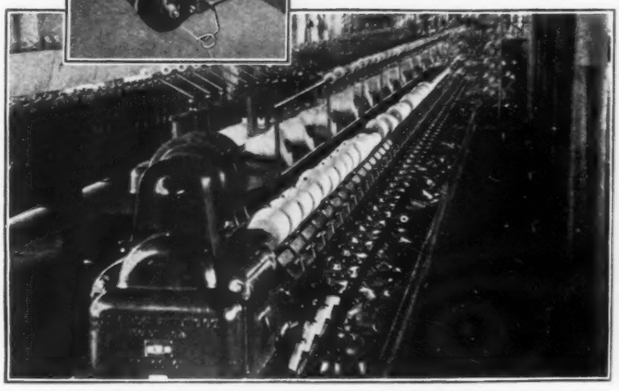

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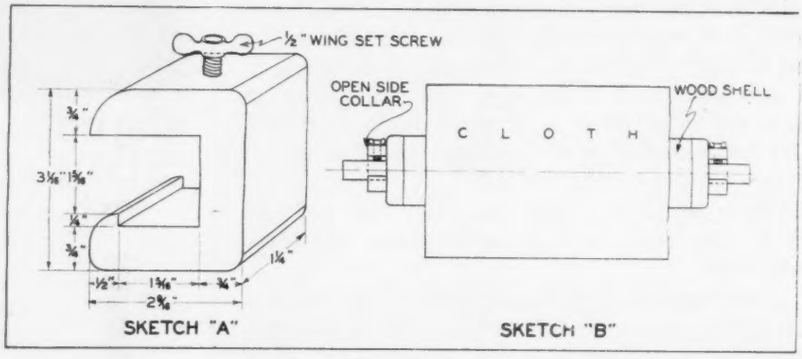
An Inexpensive Time-Saver for the Cloth Room.

A device for centering cloth shells on batching bars. . . . . .

EDITOR COTTON:

I would like to describe for the possible interest and benefit of your readers who are concerned with cloth room problems an inexpensive little time saver which we have been using for sometime in our cloth room. The little device shown in Sketch *A* is an open side set collar for properly spacing or locating cloth shells on batching bars to make the cloth wind centrally on the shells. Heretofore, this has been accomplished by using solid set collars which had to be slipped on both ends of the batching bars after the shell was put on, or using spacers to take up the spaces at the shell ends.



It will be noted that the open side collar shown is provided with a wing thumb screw, thus eliminating the necessity of using a wrench, and, being open sided, the collar is handily put on into the desired position after the shell is on the batching bar and the bar is put into position on the machine.

Sketch *B* is intended to show a roll of cloth wound on the wooden shell and the batching bar extending through the shell. The open side collars are shown in the position they occupy in use.

This little device has been in use in our plant for quite some time, and the operatives enthusiastically approved the first one they saw. It is a time saver and is inexpensive.

CONTRIBUTOR No. 6245.

The "Practical Man" and the Textile Graduate

EDITOR COTTON:

In some recent issues of COTTON I have been reading with some interest a discussion as to the "practical man" and the textile school graduate; the subject of the discussion largely being the merits of the practical man as compared with those of the textile school graduate. It is of course needless to indicate who defended whom in each case. It has, however, struck me in a rather queer way to notice the attitude of the so-called "practical man" as to the textile school graduate. He no doubt in his time had some unpleasant dealings and experiences with a textile school man or men which caused him to become prejudiced against all textile school graduates.

I am not writing this to try to convince your readers that every textile school graduate is a world beater. Neither will I try to say that the so-called "practical man" is no good. But I would like to express my own views on the subject briefly.

In the first place, let me say that no man has a right to hold any position in the mill (or any other place for that matter) if he is not practical. But by "practical" I do not mean that he necessarily has to gain all of his knowledge in the mill itself. In my estimation, a practical man is one who does the most sensible things under all circumstances. He also knows what he is doing and talking about. But that does not mean that a textile school graduate is not a practical man. On the other hand, a textile school graduate has a much better chance of becoming practical than the "practical man" himself.

Who is this so-called "practical man"? This type of man is one who usually starts to work very early in life, growing old with his job. From the beginning he does things because someone told him to do so. He is told so often and does things just as many times that, finally, he becomes somewhat of a machine himself; his actions are all automatic; he is just an habitual worker. He finally gets to the point where, we may say, he is at the peak of his career. For after spending the greater part of his life at his work he has formed a habit of doing things. New ideas are poison to him; he fails to see any sense in ideas that may be advanced by some "young upstart" or "book learned" man. All you can get out of him is, "I have done this for nigh on to forty years and it has always been right, so don't try to tell me I am wrong."

But please do not misunderstand me. The foregoing description is not intended to fit all men who have spent most of their time in the mill. It does not include all men who do not possess a textile school education. We have many men in the industry today who never saw the inside (or outside) of a textile school, yet they are men who are very able and really practical.

But these men do not boast about their practicality. Neither do they let some stubborn idea condemn a certain class of fine and capable men because of a few unfortunate dealings with someone who was not what he was cracked up to be. Neither do they go around showing openly how much they know, by asking questions that may be answered in a dozen different ways (each answer being sensible and feasible) and holding all replies to one answer: their own. For this is not practicality.

We've looked at the "practical man", so now let

us consider the textile graduate. There are, of course, two kinds, the good and the bad. In the bad class we may put the lazy shiftless lot who go to school to keep out of work and to have one good time after another. School work is only secondary, even if that. We also can put in this class those who apparently are very good students, students whose marks are always fine, the so-called "grinds", "human parrots", "rule learners and reciters", "word-for-word descriptionists". These men memorize everything so perfectly that you cannot say they are wrong, and yet they are not practical for, "they know not whereof they speak."

But there is a class of textile school graduates who deserve credit. These men really study. They don't memorize. They take apart and rebuild. They are always ready to ask why. They visualize things in more ways than one. They are not ashamed to ask questions. They allow for the difference between theory and practice. They have the principles of mill work when they leave school, and with some real experience in the mill they become practical. Practical because they look at the whole thing from different angles. They know what the machinery should do and they make it do so. But they are not so conceited as to think they know it all or that their way is the only way. Suggestions are always in order.

To those opposed to textile school graduates as a class, I say, "You are selfishly and stubbornly prejudiced." But even through this opposition, the time is not far away when practically all mills will be managed by textile school graduates.

P. R. K. (MASS.)

"Wash"---Paging "K.Y.(Mass.)"

EDITOR COTTON:

Well, I see that "K. Y. (MASS.)" has entered the scrap between "WASH" and "A. T. G.", with his short article on page 77 of the December issue of COTTON. Let us see how much he knows. Let him answer the following:

(1) On the Houldsworth principle the bobbin and spindle travel together. Now, why do we have a difference of ten teeth on the bell gear on all new differential motions?

(2) Being such a practical man, I would appreciate "K. Y." grading me on the following: All dry fibers are poor conductors of electricity and are therefore easily susceptible to being so electrically charged as to render manipulation difficult. What is the cure—moisture or oil?

(3) Which has the most drafting efficiency, the shell or the solid roll?

(4) If a 27-inch doffer makes 14 r. p. m., and the cylinder 175 r. p. m. on a card, what should be the speed of the comb pulley?

(5) Why is a special cone belting required in the bobbin lead system?

(6) Was twist inserted into yarn before the invention of the traveler? If so, why should we credit the traveler with being the only agent to insert the twist in ring spinning? WASH (R. I.)

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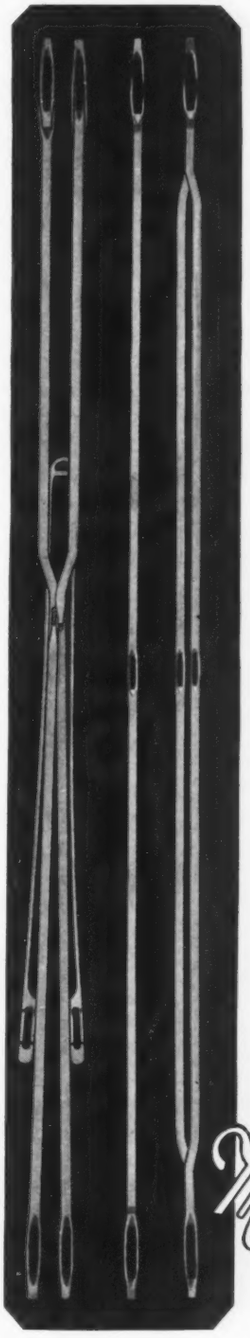

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Feed Plate Setting for Long Staple

Practical comments on a question concerning this and other card settings . . . . . .

EDITOR COTTON:

I will offer the following in answer to the question of "D. H. (N. C.)", page 65, January COTTON, as to feed plate setting on a card for the best breaking strength, using 1 3/32-inch and 1 5/32-inch stock, making a 40-grain card sliver from a 12-ounce lap with a draft of 120 on the card.

The draft "D. H." is using is a progressive draft, and in my opinion is as good as he will find, as this will give him a cleaner sliver than a shorter draft, and yet is not long enough to make his work uneven; taking it for granted that his laps are good as to evenness—for, as we all know, if the lap has thin places, the longer draft, the longer the thin place will be in the sliver. This means more yards of light sliver, or if heavy places in the lap, more yards of heavy sliver.

As to the card settings I am offering, I would not say that they are the best, but from my own experience they are the best I have used up to the present time, on practically the same lay-out that "D. H." is using, and I have gotten good results with them:

Feed plate from licker-in	10/1000
Licker-in from cylinder	7/1000
Top mote knife from licker-in	10/1000
Bottom mote knife from licker-in	7/1000
Back knife plate—bottom edge	17/1000
Back knife plate—top edge	22/1000
Front knife plate	19/1000
Cylinder screen from cylinder front	⅛-inch
Cylinder screen from bottom	34/1000
Cylinder screen from back	22/1000
Licker-in screen from cylinder	17/1000
Licker-in screen toe from licker-in	⅛-inch
Flats from cylinder	9/1000
Doffer comb from cylinder	17/1000
Cylinder speed	165 r.p.m.
Licker-in speed	420 r.p.m.

As the feed plate setting is the main topic, I will state my reason for setting it on a 10/000-gauge. My idea for this setting is to get it as close as possible without injuring the stock. We must of course take into consideration the weight of the lap and the production of the card.

In making a 40-grain sliver from a 12-ounce lap, drafting 120, I think 10/1000 is an ideal setting as it will give a cleaner and more uniform sliver; it is close enough to get most of the fine leaf; and gives a better combing effect and delivers the stock to the cylinder in a good condition for carding—as the fibers are very well straightened out when received by the cylinder, which prevents a lot of broken fibers in carding.

On most cards, it is 1 1/16-inch from the actual bite of the feed roll to the bottom of the face of the feed plate. Where the setting is made and when the stock gets to this point, it is so light there is no danger of its being injured since the licker-in starts to work the stock as it comes from the feed roll and gradually works it down to a very thin fringe.

No doubt there are fibers broken by the licker-in on any feed plate setting, but I prefer having the stock delivered to the cylinder in a good smooth sheet with a good even sliver coming from the doffer, rather than having it delivered to the cylinder flakey, resulting in a cloudy sliver and a very poor breaking strength.

In making these statements, I am naturally taking it for granted that the card is in good mechanical condition; that is, that the feed rolls, licker-in journals and shrouds are not worn, and that it is good clothing and licker-in.

I will add that there are several things which will detract from breaking strength, even if the card is doing its best. One of the worst evils is running the ends too tight at the drawing frame, causing a tension and an increased draft, which stretches the sliver and causes it to be uneven. A good rule is to be sure that the figured draft between the front roll and calender roll is always less than 1.00. I refer to metallic rolls; when you increase the surface speed of the calender roll over the surface speed of the front or delivery roll, you are certainly increasing the draft, and that can only result in more tension on the sliver, which surely stretches it.

Roll settings and tension on all flyer frames are vitally important for good breaking strength. I'm off the subject, but I thought I'd add these few remarks. With everything else equal, I'm sure the card settings I have given here will get good results.

CONTRIBUTOR NO. 6296.

A Discussion of "S. I. C.'s" Fly Frame Problem

EDITOR COTTON:

I have just finished reading the article by "WASH (R. I.)" on page 69 of the January issue of COTTON, wherein he attempts to answer the question submitted by "S. I. C. (N. C.)" on page 73 of the November issue of COTTON. The question submitted by "S. I. C." reads as follows:

If I am starting up a fly frame among others of a different make, and can't get the right flyer speed, hence the front roll speed desired, can I effect the desired change with the gears? Suppose I have a 45-tooth gear on the jack shaft which drives the spindles, and a 48-tooth gear on the top cone receiving motion through an idler from the twist gear. I put a 48-tooth gear on the jack shaft, which causes the spindles to go 48/45 as fast as they did, and I next put a 45-tooth gear on the top cone shaft (a driven gear) which causes the top cone, and hence the front roll, to go 48/45 as fast as they did. The spindles and front roll have now been speeded the same amount, and I have an 18-tooth gear on the bottom cone. What size bottom cone gear do I need to make the frame run? Is it practical to speed up fly frames in this manner?

"WASH'S" figures on page 69 of the January issue of COTTON show that the same twist per inch is maintained after the gears have been changed. But, "WASH" goes on to say: "I fail to see why the cone gears should be changed to run the frame. The top cone changes the excess speed, and the gear on the jack shaft changes the standard speed. Therefore, other conditions remain the same, and the position of the cone belt is not changed, so it would be wrong to

change the cone gear."

I think that this question as submitted by "S. I. C. (N. C.)" floored "WASH" and he should have taken the count.

On bobbin lead frames, in order for the bobbin to wind the roving onto itself, its surface speed must be equal to the surface speed of the presser pad plus the surface speed of the front roll.

"WASH" says the top cone changes the excess speed; this gear does not affect the excess speed, it does speed up the bobbins, but at the same time it also speeds up the front roll, giving the bobbins more roving to wind onto themselves. Therefore, the excess speed of the bobbins is not affected. If the ends were slack before changing this gear they would remain slack after changing, or if they were tight before changing they would remain tight. This gear has the same effect as the twist change gear. I wonder if "WASH" changes the excess speed when he changes the twist gears?

I will say here that in making the change referred to by "S. I. C.", changing the gear on the jack shaft and speeding up the spindles, and changing the top cone shaft gear, and speeding up the front roll, bobbins, carriage and all parts driven by the cone belt, to operate that frame again with these changes, he would be compelled to do one of the following: Change the cone gear to one having a larger number of teeth (bottom cone gear) or change the compound pinion gear to one having a larger number of teeth, or change the position of the cone belt on the cones, and no adjustment of the belt could be made if the belt were already starting from the end of the cones, or change bobbins and use some of a larger diameter.

Now let us take the changes of "S. I. C.", one at a time. When he changed the gear on the jack shaft from 45 to 48 teeth, this speeded up the spindles, but left the bobbins at their original speed. If "S. I. C." had tried to start his frame at this stage of the change, his ends would have slackened down, because the excess speed which the bobbins had over the spindles was destroyed when the spindles were speeded up.

Now we will take the next change, that of changing the top cone shaft gear from a 48-tooth gear to a 45-tooth gear, this being a driven gear will speed up the top cone shaft. The top cone being on this shaft will in turn speed up the bobbins, and the front roll, being driven from the top cone shaft, will be speeded up in the same proportion that the bobbins were speeded up. The surface speed of the bobbins will not equal the surface speed of the presser pad plus the surface speed of the front roll, after making these changes, because the spindles have been speeded up individually, and the bobbins and front roll have been speeded up exactly the same amount. This still leaves the spindle speed too high for the bobbins to wind the roving onto themselves, and to remedy this the bobbins will have to be speeded up individually in the same proportion that the spindles were speeded up when the gear on the jack shaft was changed from a 45 to a 48-tooth gear.

As to what size bottom cone gear would be needed to make the frame run, this can be found as fol-

The Story of Cotton

This is the seventh of a series of advertisements telling the story of cotton from its earliest cultivation in India and Peru to present times.

VII. THE ANTE-BELLUM PLANTATION

So many thousands of magnolia-scented, romantic words have been written about the cotton plantations of the Ante-Bellum South that the average reader is prone to overlook the fact that the cotton plantation was a highly organized business, the foundation of a well developed economy and of a culture which was broad and tolerant.

The "big house" of the stories was the center of the plantation. Here the family lived, dispensing a lavish and gracious hospitality to friends and kinfolk, and here—on the broad verandah when the weather was warm or before an open fire in winter—grave gentlemen discoursed of this and that in a fashion which made of conversation a veritable art. Here the mistress was supreme, ministering to the welfare of the family and its numerous slave dependents.

The master's headquarters were in an "office" in the yard, which also served as living quarters for the young men of the place. He sat at an old-fashioned, inviolate desk, where he wrote his letters and filed for future reference receipts, bills of lading, packages of cotton seed, and remedies for man and beast. His constant and unceasing care was the land, and his broad-brimmed hat and blooded saddle horse were familiar figures in his broad, productive fields. To prosper, the plantation had to be kept busy the year round, in season and out.

For the Deep South, New Orleans was the major market, and down the Mississippi and its tributary streams rolled thousands of bales of the fleecy commodity. Cotton from the Hermitage, Andrew Jackson's Tennessee plantation, was floated down the Cumberland to the Ohio, thence to the Mississippi and so to New Orleans. Other rivers tapped even more productive regions; and the Crescent City did a huge commerce in cotton, buying it from the interior and paying for it in fine furniture, in fine linen, in silver services, in carriages, and in actual hard cash.

In many respects it was an idyllic age. But it was foredoomed; and the upheaval which ended it was so violent that now there exists of the Ante-Bellum plantation life only memories, and these half lost in forgetfulness.

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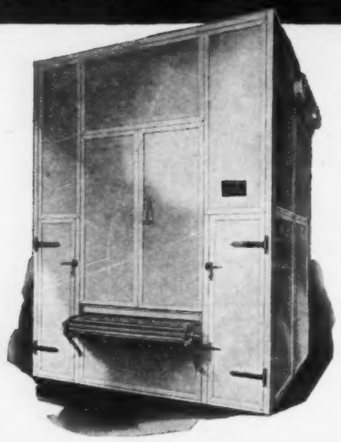

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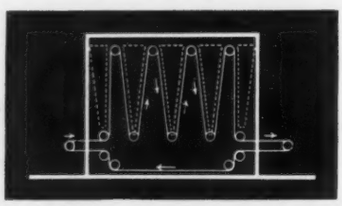
FOR dyed, finished or printed piece goods of all kinds . . . also other continuous sheet, web, strip or string materials . . . washed, coated, impregnated, etc.

Operation is simplicity itself . . . no rollers, guides, clamps, festoons or leaders. Drying is speedy and uniform. Nothing but air touches upper face of material . . . no tension, thus allowing full shrinkage or crepe effect. Extremely compactness, saving floor space.

Our new Bulletin No. 68 will acquaint you with this newest of piece goods dryers. Write for your copy.



PROCTOR & SCHWARTZ, INC
PHILADELPHIA

lows: The gear on the jack shaft was changed from a 45 to a 48-tooth gear, an increase of three teeth. Then, $3 \div 45 = .066$, or an increase in size of 6.6 per cent. There is an 18-tooth gear on the bottom cone, which should be increased 6.6 per cent, so $18 \times 1.066 = 19.2$ nearly. If the cone belt was already starting at the extreme end of the cones, I would put on a 20-tooth bottom cone gear and adjust the position of the belt on the cones so that the ends would start at the proper tension.

In answer to "S. I. C.'s" question as to whether it is practical to speed up fly frames in this manner, I would say No. In speeding up fly frames in this manner and maintaining the same twist per inch, every moving part of the frame, except the jack-shaft, and the gears which are set-screwed to it, including the tight and loose pulleys and the intermediate twist gear, is speeded up. So why not speed up the frame by simply speeding up the jack shaft?

I would be glad to see more discussion of this subject in future issues of COTTON.

R. H. (GA.)

"Wash" Answers His Own September Questions

Here you are, "A. T. G." and others—your friend "Wash" offers his answers to his list of seventeen card room questions. What say you? . . . .

EDITOR COTTON:

I see on page 71 of the November issue of COTTON that "A. T. G." in referring to me, states, "He boasts of being practical. I wish he would redeem himself by sending something to you in the future that is practical."

O. K., "A. T. G." I will try to give something practical by answering my own questions, which appeared on page 69 of the September issue, that I hope "A. T. G." will find to be practical.

But before doing so, I would like to address "A. T. G." directly, and have him hold the following in mind; it may do him a great deal of good.

What is rarest in the world is fair-mindedness, method, the critical view, the sense of proportion, the capacity for distinguishing.

The common state of human thought is one of confusion, incoherence, and presumption, and the common state of human hearts is a state of passion in which equity, impartiality, and openness to impressions are unattainable. Men's wills are always in advance of their intelligence, their desires ahead of their will, and accident the source of their desires, so they merely express fortuitous opinions which are not worth the trouble of taking seriously, and which they have no other account to give of themselves than this childish one: I am, because I am.

The art of finding truth is very little practiced; it scarcely exists because there is no personal humility nor even any love of truth among us. We are covetous enough of such knowledge as may furnish weapons to our hand or tongue as may serve our vanity or gratify our craving for power, but self-knowledge, the criticism of our own appetites and prejudice is un-

welcome and disagreeable to us.

Now for the questions, which appeared in September:

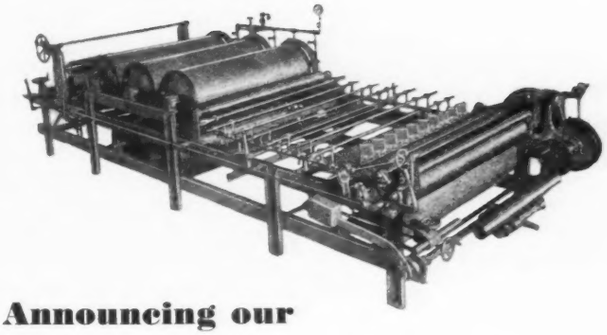
(1) *In a picking machine, what harm can be done by increasing the draft without making other changes?* My answer: Let us assume that before the draft is changed that the stock is struck the proper number of blows to the inch. Therefore, if we increase the draft we must decrease the speed of the beater correspondingly. If we increase the draft without reducing the speed of the beater, the stock receives too severe treatment which makes it fluffy in the succeeding processes.

(2) *In setting a beater, what part of the beater box should be considered so that the stock will not be taken around a second time?* My answer: All practical men know that every little while the beater blades must be sharpened. Therefore, it is necessary to move the beater to the feed rolls a distance equal to the amount planed from the surface of the beater blades. This setting will create a space between the beater blades and stripping plate that will allow much of the stock to be taken around a second time. So, in such a case you must set your stripping plate up to the beater blades the same distance as that of the beater to the feed rolls. A good gauge for both settings is a closed, ordinary two-foot rule.

(3) *On a card we set the licker-in to the feed plate almost to touch. Does such a setting injure the stock? If so, what about the action of the Kirschner beater on the finisher picker?* My answer: The licker-in teeth pass through the fringe of fibers at such a high speed or velocity that if they are not scattered over the shell of the licker-in a tooth will strike a fringe of cotton exactly where the previous one struck, thus injuring the fibers. In order that this may not happen, several separate spirals are laid side by side, the distance between two rounds of any one spiral being one inch. There are five to ten spirals side by side according to the kind of stock used or the class of work for which the carding is done. It can thus be seen that as the teeth of the licker-in pass through the fringe of cotton, a lateral action is obtained at all times, which makes it impossible for the fibers that have received a combing action from one spiral of teeth to fall or come back to the same groove. It can likewise be seen that the fibers are not straight when hanging over the nose of the feed plate, as most all writers and textbooks tell us, but instead are always diagonal.

With the carding beater, the pins that first come in contact with the cotton are shorter than the others following. It can be seen with this arrangement that the pins penetrate and break up the cotton, without injury, for the reason that the distance from the long steel pins on the lags is too great a distance. Therefore, you do no injury to the stock in the setting, but you can do a great deal of injury if the beater speed is too great, and also, if the surface speed of the licker-in is too great.

(4) *Which is the best to extract the foreign matter from the field of action between the licker-in screen and licker-in: properly set mote knives with air admitted at the back of the card or poorly set mote*



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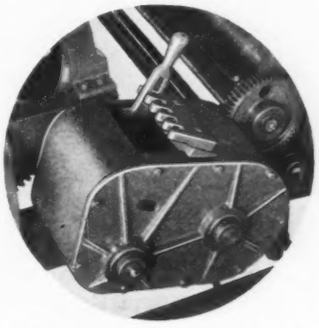

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The slow speed feature enables the operator to bring the warp almost to a full stop yet gives just enough "creep" so that it doesn't stick to the cylinders nor come to a complete stop in the size solution, thus avoiding any possibility of baked ends and streaks in the warp and finished fabrics.

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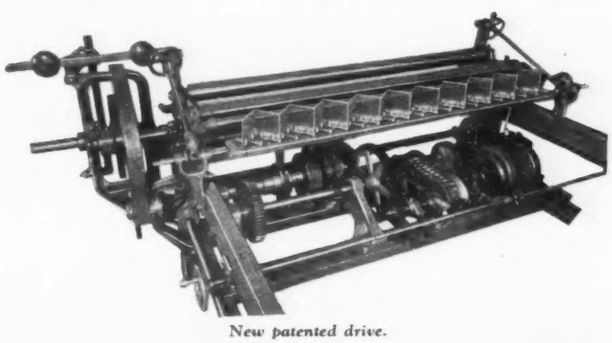


New patented drive.

knives with the back of the card air-tight? My answer: In the field of action from the feed plate to the back of the licker-in screen, the surface speed velocity of the licker-in has a tendency of carrying the foreign matter along with it, which gives the mote knives the only opportunity of striking the heavier matter. Therefore, in order to influence the lighter matter to drop, we must destroy all air currents about the back of the card, which in turn reaches the air currents created by the licker-in. Let the boys make the following test: Remove one mote knife, next, make the back of the card air-tight, and do not half try, *make* it air-tight, and you will find that the mote knives are not such a great cleaning agent as many would have us believe. Keep the back of the card air-tight.

(5) *Do you prefer a heavy lap with slow speed or a light lap with faster speed? Why?* My answer: To my mind, this question is the most important of all questions pertaining to the operation of a cotton mill. We all admit that the goal in a cotton mill is strong, even yarn. Therefore, if we have a heavy lap with slow feed, which of course means a long draft, we are giving the fringe of cotton hanging over the feed plate an unnecessary combing, and this action on the fiber is similar to the surface speed of the licker-in being too great. On the other hand, we can extract foreign matter better from a thin sheet of lap and at the same time reduce the time the fibers are at the mercy of the licker-in teeth.

(6) *If you were going to reduce your carding, how would you do it? Would you reduce the speed of the doffer, the weight of the sliver, or the weight of the lap?* My answer: I would reduce the weight of the lap if the lap were over 10 ounces to the yard; if under 10 ounces I would reduce the sliver. I would reduce the weight of the lap, and make the necessary change on the finished drawing to make up for the lighter sliver from the card.

(7) *When are humidifiers most helpful on cards?* My answer: On cold mornings, the watchman should be instructed to set them in operation at least two hours before starting time. Try it.

(8) *On drawing, which is the best draft? Why?* My answer: Roll drafting is no doubt the most important feature of parallelizing and attenuating in the production of good yarn. Therefore, we must have proper roll setting and proper draft. The drawing draft should not exceed 6 inches to an inch, for the reason that drawing rolls act on more fibers at the one time than any other machine on carded yarns.

Therefore, too close setting of the drawing rolls, excessive speed of the rolls, or an excessive draft will create a great amount of frictional contact between the top and lower rolls, which will make a wide difference between the figured draft and the actual draft.

(9) *Why is a draft less than 1.00 required between the front drawing and calender rolls on drawing frames?* My answer: This is necessary when the equipment of the mill consists of a much greater number of cards than finisher drawing deliveries, when it is necessary to run a heavy sliver and an excessive draft.

(10) *Are metallic rolls better than cork or leather on drawing frames?* My answer: The common rolls are driven by frictional contact from the bottom steel rolls, while those that are metallic are driven by the flutes of the lower roll meshing with the flutes of the upper roll, and consequently a more positive draft is obtained than with common rolls. However, metallic rolls are not 100 per cent positive. (Let "A. T. G." bite at this one.) With metallic rolls we get almost a figured draft, for we have no frictional contact between the top and lower rolls.

(11) *Name the causes of cut webs on drawing frames?* My answer: Gears not meshing properly is the most harmful defect producing cut webs. Dry rolls, rolls out of alignment, especially metallic rolls, worn collars or arbors, that make it necessary to reverse their position, rolls requiring buffing, foreign matter on the surfaces of the rolls, small laps on the surface of the rolls, too wide or too close setting of the drawing rolls, excessive draft and speed; rolls covered with uneven stock, unevenly weighted rolls, broken roll stands or stands out of alignment, uneven stock, allowing laps to run out at the cards and allowing the heavy portion of sliver from them to reach the drawing frame, too much waste in the raw stock—these are the causes.

(12) *What is the proper draft on a slubber? Why?* My answer: It must be admitted that the finished drawing sliver contains as many fibers in its cross-section as the carded sliver and surely a draft of 6.00 on a slubber would be excessive for two reasons. First, we have only three lines of drawing rolls on a slubber, and, second, they are not as heavily weighted. So on a slubber the draft should not exceed 4.00.

(13) *Which is the best compound for differential motion, the Houldsworth or the new so called differential? In answering this question, please consider the additional impetus caused from the cone.* My answer: With the Houldsworth compound the bobbin and the spindle revolve at the same speed without additional compounded speed or additional impetus caused from the cone. Any compound which embodies this feature of having the spindle and the bobbin revolve together is a simpler proposition as regards the cones than a compound wherein there is a differential or a difference in speed between the spindle and the bobbin. This is for the reason that in consequence of that difference in speed, the cones must be of a different form. With cones correct when the bobbin and the spindle travel together, must first be added the modification to take care of the difference due to the difference in speed between the spindle and bobbin, and then you have the foundation on which to build or modify the form to take care of these other factors. This foundation cannot be as simple and therefore as sure as the foundation of a pair of cones mathematically correct and easily arrived at with the spindle and bobbin traveling together. It follows, then, that any compound such as the new differential cannot give as good a tension as a compound of the Houldsworth motion. However, please be reminded that the Houldsworth motion was patented about the year 1826 and was not so hot until my good friend Fay H. Martin in the year 1897 inserted a sleeve between the differential sleeve and the driving shaft which made

the motion perfect as regards eliminating friction. I think the boys of this department will credit me with the ability to judge a practical man. I know Mr. Martin very well and in my judgment he is the greatest draftsman and mill engineer in the cotton industry. Please be reminded again that although Mr. Houldsworth received his patent in England, the inventor of the motion was Asa Arnold of Rhode Island.

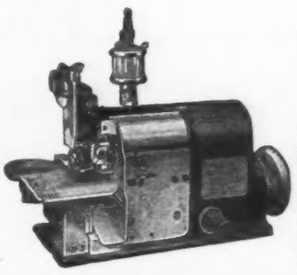
(14) *We have the bobbin lead system, and so, if the bobbin leads, how can the spindle or flyer be an aid to the cone belt?* My answer: Of course the boys know that I am not in favor of the bobbin lead system. However, in order to save space, no other way I think is more convincing that neither the spindle nor flyer can be an aid to the cone belt than to move any fly frame by hand, and notice how the bobbin will move in advance of the flyer.

(15) *Why do you find a brake to stop the bottom cone from revolving in the opposite direction at doffing time, or when the bottom cone is raised? Why does the bottom cone revolve in the opposite direction when raised on all makes of fly frames in the bobbin lead system?* My answer: The above proves that the bottom cone drives the compound or periphery around the gear on the driving shaft in the opposite direction or if in the same direction is called on to check the gears in the periphery which compounds the speed of the sleeve gear. So, when you raise the cone at doffing time this is what happens: The brake holds the bottom cone, which checks the speed of the compounds, and as explained elsewhere, the bobbin and spindle revolve together. On the other hand, if the bottom cone was not held by some means, this is what happens: The bottom cone being raised leaves its train of gears free to revolve. Therefore, the driving gear gives motion to those in the compound or periphery, and these gears circle the gear on the differential sleeve, but at the same time in some cases the bobbins are made to revolve in the opposite direction, which causes a mess at doffing time. However, it must be admitted that when the gears in the compound are made to circle the gear on the differential sleeve, that the compound will move in the opposite direction to that of winding on. This proves that a great amount of resistance exists in the compound when the frame is in operation, and that the spindle or flyer is of no aid to the cone belt.

(16) *What causes tight spindles on fly frames?* My answer: Dirty bolsters are the chief cause. Others are: Not having the spindles wiped out at least daily; spindles or bolsters out of alignment will heat and cause expansion that will bind the spindle. Dirty bobbins and poor oil are other causes.

(17) *What is the best spindle speed on the slubber, intermediate, fine and jack frames? Why?* My answer: For a 12x6 slubber, the revolutions per minute should not exceed 650 r.p.m. On a 10x5 intermediate, 880 r.p.m.; on a 7x3½ fine frame, 1,200 r.p.m.; and on a 6x3 jack, 1,350 r.p.m. Because excessive spindle speed increases the pressure at the end of the presser pad, makes a firmer bobbin, but creates unequal conditions.

WASH (R. I.)



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The booklets or catalogs briefly mentioned below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

2. Pepperell Equipment—10 page illustrated booklet showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments, installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

10. Leathers, Textile—Booklet No. 101, 48 pages, illustrated. Showing "Bondaron" Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

15. The Powers System of Thermostatic Control—"**Slasher room is Bottle-Neck of Textile Mill.**" 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

25. "Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

28. Akron Belting—Practical Rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full fashioned knitting.)

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan Inc., Passaic, N. J.

63. S-W Paint Standardization Plan—valuable booklet telling how protective coatings can effect economies in plant operation and maintenance, describing how each surface is finished to best meet its specific needs, giving ideal lighting and sanitary conditions and economies in increased production. Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio.

64. Efficiency and Performance of SKF Roller Bearing Spindles—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

65. Why Cooper Hewitt Light is Better Than Daylight—A 16 page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

70. Fafnir Ball Bearings for One Process Pickers—outlining the advantages of ball bearings in guaranteeing smooth, accurate motion, particularly on eveners, as well as uninterrupted production, ease of operation and cleanliness of bearing units throughout the one-process pickers. Fafnir Bearing Company, New Britain, Conn.

72. The Merrow Butted Seam—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

75. The Facts About Armstrong's Seamless Cork Cots—A helpful book containing plain facts, cost studies based on actual mill records, expert analysis, complete details on the advantages of Armstrong's Seamless Cork Cots. Armstrong Cork & Insulation Co., 923 Arch Street, Lancaster, Pa.

78. Booklet L 1289 A—Loom Motors and Control—giving details of the low installation, operating and maintenance cost of Westinghouse Loom Motors. Westinghouse Electric & Manufacturing Company, Room 2 N, East Pittsburgh, Pa.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept., C-11, Dayton, Ohio.

90. Atwood Booklet—Describing Atwood Winders, twisters, wire swifts, and various types of feed rolls—useful to throwsters interested in learning the principal features of various Atwood machines. Atwood Machine Co., Stonington, Conn.

91. Illustrated Buyers' Guide and Catalogue—Of interest to every dyehouse executive, not only telling what dyehouse equipment is available in Monel Metal but also where to get it. The International Nickel Co., Inc., 67 Wall St., New York, N. Y.

93. Metso—Describing this industrial cleanser which has wide use in industrial cleaning of metals, floors, etc., and is used in kier boiling, silk and rayon degumming. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

94. New Development by Onyx—Eight-page booklet describing and giving uses of new developments in sulphonated aliphatic compounds . . . called Aliphatic Ester Sulphate and Glyceryl Sulphates. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

96. R. & H. Non-Flammable Solvents—describing the characteristics and many uses of non-flammable solvents. R. & H. Chemicals Dept., E. I. duPont de Nemours & Co., Wilmington, Del.

97. Suggestions For The Modern Silk and Rayon Throwster—describing the various uses for Laurel Brand Products and giving valuable suggestions in silk-soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., 2600 East Tioga St., Philadelphia, Pa.

98. Saving Labor, Material and Power in the Textile Industry—A 20 page booklet showing the advantages and typical installations of temperature, pressure and humidity instruments and controllers in various processes of textile manufacturing. Foxboro Co., Foxboro, Mass.

104. Warp Sizing. National Oil Products Co., Harrison, N. J.

105. Mildew Prevention. National Oil Products Co., Harrison, N. J.

106. Cotton System Warp Sizing on Multiple Cylinder Machines—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk—Charles B. Johnson, Paterson, N. J.

107. Complete Information on Alemite Lubrication. Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

110. 3-In-One for Industrial Uses—showing the many industrial uses and advantages of this oil. Three-In-One Oil Co., 70 Varick St., New York, N. Y.

111. Roll Spacing Determinator—showing and describing this machine for cotton mills which eliminates the problem of roll setting to the mill man and determines by mechanical means the exact spacing considering staple, character, size and twist. The Belger Co., 36 Pleasant St., Watertown, Mass.

114. Denman Parts for All Makes of Looms—showing drawings and dimensions of Denman pickers, hold-ups, bumpers, and bunters made of fabric and vulcanized rubber. Denman Tire & Rubber Co., Warren, Ohio.

115. How to Cut Cloth Room Costs with Automatic Picking Machines and Improved Inspecting Machines—Hermas Machine Company, Walburton Ave., Hawthorne, N. J.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch, and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

118. Cotton Picking, Opening and Cleaning Machinery, Cards, Combers, Roving, Drawing, Spinning, Twisting, Rings, Worsted Machinery and Woolen Machinery—Pamphlets are issued on each of the individual machines. Will be sent to subscribers who make requests on the letterhead of the mill and indicate special pamphlets desired. Whitin Machine Works, Whitinsville, Mass.

119. The World's Finest Sewing Machines—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

121. Engineered Packages for the Textile, Dry-Goods and Apparel Industries—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

122. Water Filters and Filtration Equipment—Containing complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York, N. Y.

123. An Outline of History for Anti-Friction Bearings—a treatise outlining the development of anti-friction bearings from their earliest appearance in history to their present important position in industry. Fafnir Bearing Company, New Britain, Conn.

124. New Condensed Catalog on Ball Bearings and Power Transmission Units—Combines all of the information and the industrial uses of radial ball bearings as well as the Fafnir power transmission line of wide inner ring and ball bearings. It gives complete information, interchangeability tables, dimensions, prices, etc. Fafnir Bearing Company, New Britain, Conn.

125. More Light with Lasting Cleanliness—a booklet pointing out the many advantages of white paint and the qualities to be looked for to get the greatest value in such paint. U. S. Gutta Percha Paint Company, Providence, R. I.

126. Improved Lucas Underclearer Rolls—giving details of the many advantages of this roll for spinning frames, mule frames and roving frames. L. M. Hartson Company, North Windham, Conn.

128. Houghton's Handbook for the Hosiery Dyer—This 32 page handbook, prepared by the Houghton Research Staff, gives formulas for boiling-off, dyeing and finishing many types of knit goods. Also contains several pages of reference tables, conversion tables, etc., of constant value to every dyer. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

129. The Care of Leather Belts—Wall Charts—This 24" x 36" wall chart tells how to dress a belt, how to splice a belt, how to make a good cemented joint, how to figure a belt's capacity, how to find the speed of any pulley and one hundred and one other things about installing and operating belts. Contains horsepower tables and charts showing how to install a belt on any type of drive. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

135. The Pick Method of Weaver Wage Payment—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables, included. Durant Manufacturing Co., 1932 No. Buffum St., Milwaukee, Wisc.

KNITTING SECTION

THE IMPROVED "SQUARE" HEEL

ON THE K SPIRAL GUSSETOE MACHINE

About a year ago we introduced the first development in heel construction that had taken place in the seamless field in a half century.

This was the Square Heel produced on the model K machine. It is a heel that fits the human foot with almost uncanny smoothness. With this new attachment on the Model K, you get a perfect right angle heel *knit* to shape. It does not slide up or down; it does not pull against the toe. It gives smooth, wrinkle-less fit across the ankle. It has the appearance of the most expensive stockings made.

Now, this latest development which is exclusive with the K Spiral Gussetoe Machine includes all of the good features of the Square Heel, adding to the heel additional fabric giving it greater strength along the gore line. Also the heavier fabric is extended further under the heel where the heaviest wear comes.

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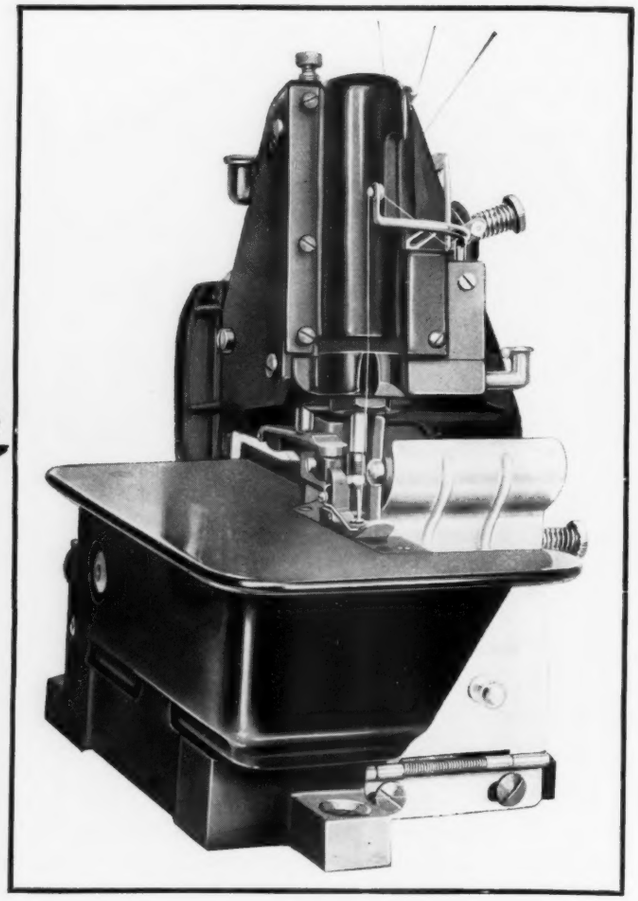

Suppose your operators quit work for fifteen minutes out of every hour? » » »

This Style 39200 AJ Union Special Overseamer enabled a prominent knitting mill to increase production per operator from 45 dozen sweaters per week to 60 dozen, or 33-1/3%. In this particular plant the return on the investment for these machines was 112%. The name of this plant and a copy of the complete performance audit will be sent on request.

YOU wouldn't allow wholesale loafing in your sewing room to go unchecked. What's the difference in the final results whether the operators or the machines loaf? Judged by the standard performance in hundreds of new installations, there are a lot of sewing machines that are "loafing" more than 15 minutes out of every hour.

Do you *know* whether any of your machines are in this class? Have you really checked the matter up recently? It's worth serious investigation. We make it easy to check your performance. We furnish (free) a form on which you can easily calculate your own rating as compared with 1934 possibilities. Ask for form 374. We will send it by mail or by a representative—as you choose. We will also gladly supply for comparative purposes, accurate data on the cost of operations like yours, based on service records of modern equipment.

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UNION SPECIAL MACHINE CO.

400 N. Franklin Street **Chicago, Illinois**

A General Resume of Current Topics of Interest to Knitting Mills

A NUMERICALLY strong element of the hosiery industry has come to look upon codes as a necessary nuisance—necessary because they require to be done in the interests of a given industry at-large that which the individual units have from time immemorable neglected to do; a nuisance because they are liable to cause discord and are of indefinite duration as to the control they are assumed to establish.

When the industry on January 22 resumed plant operation on a 40-hour week basis after a five-weeks curtailment by 40 per cent from the schedule as originally approved,* it was permissible to operate footers two shifts of 35 hours each, the pay of operatives to be the same as if employed in 40-hour shifts. On February 9 a modification of Section 7 of the code increased the time limit for each shift, when two were employed, to 36 hours, operatives to receive the same pay as if employed 40 hours.** This change took effect twenty days after the schedule was changed from 24 hours to 40 hours, and less than two weeks later, numbers of mill heads were uneasy over an indicated under-current of sentiment in favor of another curtailment, intended, it was said in some circles, to be experimented with as a possible permanent schedule.

Guesses of some of the smaller producers of full-fashioned hosiery ranged from 32 to 35 hours for leggers. Several, operating less than 25 to 30 machines said a 32 hour week would put them out of business, if wage payments were to be on a basis of what operatives have been receiving for 40 hours. To stay in business we must knit for the masses, a manufacturer thought. He was willing to condone what he termed may not have been an act of wisdom in requiring that employment of footers for two 36-hour shifts. as the schedule stood at that time, obligated manufacturers to pay for 40. The lower overhead under a 40-hour run would almost offset payment for four hours in which no work was done, he reasoned. Regulation of hours, and in some extent wages, is what tends to cause a division in organizations and make the necessary code appear a nuisance.

Some of the manufacturers operating plants in the smaller class profess to believe the full-fashioned industry is not favorable to a week of 35 hours or less—maximum 70 hours; that the larger manufacturers want it. The way to get what you want is to go after it, suggests a group chairman figuring in the shaping of codes for another industry, and in this instance the thing to do would be to emulate the big fellows. If, instead of each of a number of manufacturers waging a lone-hand fight of obstruction they were to organize, say, groups of ten and several such groups combine and go with constructive recommendations, they would receive more consideration from the code authorities in one conference than any one manufacturer would be accorded in a half dozen parleys plus his letters to the code officials. It has been tried, with success, and still is the *modus operandi* of an important group in an industry of a type closely corresponding in essential details with full-fashioned hosiery.

It appears the full-fashioned hosiery industry is 100 per cent interested in the meeting of the hosiery code authority called for March 5 in Washington the first anniversary of the start of the Roosevelt administration. Interest in the eventual outcome of the meeting is the greater from the fact, it is expected, it will discuss the matter, for a time, of production control, in which the president and the secretary of the National Association of Hosiery Workers will have a voice, their official appointment to the hosiery code authority having been announced recently by Recovery Administrator Johnson. The workers' federation favors a 30 hour week, while, it appears a great majority of the manufacturers are averse to such a curtailment of work hours. It was a common recent understanding that the hosiery code authority will be empowered by the administration to "deal with all disputes in the industry."

What little opposition developed to the assessment of one tenth of one per cent of the sale price of hosiery in the gray, for meeting the cost of maintaining the activities of the hosiery code authority, seems to have subsided entirely, since objecting manufacturers have figured their approximate outlays for this purpose will amount to so little.

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*The five weeks of emergency curtailment for the hosiery industry ended on January 20, and beginning January 22 the industry reverted to a five-day production week. The Code Authority had originally petitioned for a 40 per cent curtailment of knitting operations for eight weeks. The administrator granted such curtailment for five weeks, reserving decision as to whether it should be extended beyond five weeks, and requiring for this purpose that he be furnished a report as to the effect of the first four weeks of curtailment (December 18-January 13, inclusive) on stocks on hand, production, shipments, etc. On January 17 the Code Authority submitted to the administrator a report and resolution asking that the curtailment of 40 per cent be not extended beyond January 20, an analysis of the figures having satisfied them that the main objectives of the curtailment had been achieved, and that enough additional benefits would result from extension of curtailment to warrant it, and the resulting difficulties which would occur in some plants. The deputy administrator approved the recommendation.

**The text of the new Section 7, Article IV, of the hosiery code, with reference to operation of footing equipment, approved by the administrator on February 2nd, and effective February 9th, follows:

NEW SECTION 7, ARTICLE IV

"The Code of Fair Competition for the Hosiery Industry is hereby modified by the substitution of the following language in place of Section 7 of Article IV of the Code as approved by the President on August 26, 1933:

"Members of the Industry may operate their full-fashioned footing equipment either on a one-shift or a two-shift basis, the length of such shift shall not exceed forty (40) hours in any one week, and if he operates such equipment on a two-shift basis, the length of each shift shall not exceed thirty-six (36) hours in any one week. In the latter event, the rates paid to knitters, knitting-helpers and toppers working on such thirty-six (36) hour shifts shall be such as to provide them earnings equal to those which they would receive if they were working on a forty (40) hour shift."

Uppermost in the minds of most manufacturers, whether interested directly or merely out of curiosity, is a proposal for the regulation of installation of new equipment, authority for which seems provided in the code. This probably would be preceded by a thorough study of the possible effect of such regulation. Article IX of the code provides that "Prior to the installation of productive equipment (except for the replacement of existing equipment of equal capacity or to establish balance in existing equipment) by persons engaged or engaging in the hosiery industry, such persons shall secure certificates that such installation will be in accord with the objectives of the [Recovery] Act."

One source of opposition to a curtailment of the present 40-hour schedule, as voiced by some of the smaller manufacturers, is that in the event the installation of new equipment shall be subject to regulation by any group under the authority of the Recovery Administrator, they might suffer a serious handicap.

The hosiery code authority reporting on the experimental 34-hour week said in its report that during the five weeks of 40 per cent curtailment shipments declined, as had been anticipated; but that there was effected a reduction in stocks and there was no increase in prices; and that curtailment had the effect of maintaining prices. The code authority deduced that further decrease in stocks would hinder the industry's ability to meet normal requirements. Although the curtailment was regarded by the code authority as having been "generally and uniformly effective", manufacturers operating the smaller class of plants are on record as opposed to repeating any drastic curtailment program.

The underwear code, restricting knitting to a maximum of two 40-hour shifts a week and allowing only 40 hours maximum for operating sewing machines, was regarded a few weeks ago as liable to a change in the section dealing with fair competition for the Underwear and Allied Products Manufacturing industries. It was a matter of speculation whether, as an outcome of a meeting scheduled for February 26 in Washington the following language in Section 3 of Part VI of the code might undergo a change: "No person shall accept pay for or make credit allowance for goods returned for causes other than fault or error by the seller." Some members of the industry for a long time had employed the unit control sales plan in their merchandising or had similar exchange policies. Exemption from the operations of this provision was granted by an administrative order of January 29. It was regarded unlikely that the exemption would be long continued after the meeting of February 26.

The manufacturers of sweaters, bathing suits and the several knitted outerwear items operate under a code providing for a maximum of two 40-hour shifts per week, in the knitting department; and one shift of 40 hours in all other departments. If, however, a manufacturer run his plant only one shift he may keep machinery employed in all departments eight hours a week overtime for a period of eight weeks.

It would appear that enough recommendations to keep the code authority engaged overtime for some weeks were submitted to it during the convention of the National Knitted Outerwear Association in New York last month. One recommendation calls for a designated date for seasonal openings, upon application by any group in the industry. Any showing of a manufacturer's lines prior to that date, set by the code authority, would be a violation of the code of fair competition, subject to all the penalties provided in the code. Another recommendation calls for manufacturers being compelled to attach a standard form of tag to bathing suits explanatory of the code provision relating to returns. As in other industries, the knitted outerwear manufacturers want to be compelled by code regulation to do what they cannot agree among themselves to do for mutual good. It is stated, by persons in position to know, that relatively few manufacturers are able to say, without asking for information, just what hours the regulations in their respective codes permit for plant operation. The suggestion has been volunteered that codification of all codes applying to kindred industries be undertaken by some authority, for revenue, of course, with notations of all modifications of each code, conveniently arranged as first aid for persons in a quandary over their duties and prerogatives under government control of industry.

Publicity for Code Violators; Assessment for Code Authority

Publicity for proven violations of the hosiery code reported to the code authority after February 15, pursuant to action taken by that body at a meeting in January, is expected to speedily diminish the number of complaints arising from misrepresentation by an element among middle-men more particularly, some of this class of distributors allegedly resorting to deceptive practices in transactions with unsuspecting small retailers.

The code authority extends to around 700 plants, it is stated by John W. Mettler, the Interwoven Stocking Co., chairman of the hosiery code authority. These plants, beginning as of February 1, will be subject to an assessment of one-tenth of one per cent of the dollar value of their production in the gray, to cover the cost of administering the code, as announced by the code authority. The February assessment was based on the output in November last and the March assessment therefore will apply to output in December, others following in the same order.

Effects of Curtailment

Inasmuch as the five weeks curtailment by 40 per cent embraced the holiday period when it is common to close down on production for a week or more, the actual effect of the curtailment hardly can be approximated. According to statistics compiled by the Department of Commerce from the reports of 336 identical mills their combined output, all classes, was around three-quarters of a million dozens less in December than in November and around 1¼ mil-

lion dozens less than in December 1932. December net shipments of 600,000 dozens less than in November and 1,200,000 dozens less than in December 1932 of course expresses the decline in market activity.

Some interests maintain that the falling off in December shipments, of all classes, almost parallelled the decline in output. Cancellations in December last year were of more than 40,000 dozens more than in the corresponding month of the previous year. Men's seamless half-hose fell back in orders booked and shipments, on about a parity with production in a comparison of the December months. It would appear from the December statistics that manufacturers and distributors visioned a substantial interest in juvenile and infants' stockings for spring.

A manufacturer shows samples of infants' socks made in Japan and quoted in the New York market 36 cents a dozen. The ribbed top is knitted ingrain, the foot being dip-dyed. The construction in a general way is of a character so cheap in appearance that it is doubted the socks can be retailed in American stores except in near-slum communities, and will not rise to the importance of a factor in sales of the domestic product.

April dates are being discussed for the opening of infants' socks, some interests preferring May. Developments in commodity markets generally are expected to dictate the time for the formality, which as in previous years, may be preceded by some quiet operating in the primary markets.

Hosiery Plant Expansion Inopportunely Arouses Comment of an Observant Manufacturer

The mistakes of full-fashioned hosiery manufacturers in enlarging their plants instead of scrapping obsolete equipment and replacing it with modern machinery are cited by one of their number who can lay claim to experience as sales manager as well as, previously, production manager, as accounting in large part for an over-machined industry. "We simply are victims of our greed," is an indictment which he lays against those in the industry favoring a permanent 40-hour week, although admitting it was long days and overtime plant operation in addition that brought about a situation in which for months supplies have so far exceeded demand as to undermine the price structure and leave it tottering just when much effort is being bestowed upon the matter of stabilization.

"If manufacturers around ten years ago had destroyed their obsolete 39-gauge equipment and replaced it with modern machines, instead of building larger mills, we would have a better balance as between production and shipments, and less of cheap sub-standards to reckon with," it was suggested by the manufacturer. "The failures among women's full-fashioned hosiery mills in the past decade were confined almost exclusively to manufacturers who seemed to feel they could compete with modern establishments on the prestige they had won when turning out good hosiery from machinery that had not been worn out during years of day and night operation," the manufacturer continued, citing mills in Philadelphia that once were landmarks of the full-fashioned industry. Some that were among the first in Pennsylvania have disappeared entirely; some passed to new ownerships and have had a hectic existence while struggling between receiverships and silk-trade control, and are now in no position to modernize plants.

Pointing to the mistakes of manufacturers who expanded, erecting new buildings at the highest labor cost in the history of American industry, one of the recognized successful hosiers, who speaks from actual knowledge of the facts, mentions a one-time nationally known figure in manufacture and distribution who built a large addition to an old building housing 39-gauge machines, and added new equipment of that type. The plant is in operation as a back-number coarse gauge mill, but the halo of prestige for the former owners and later managements has totally disappeared from the firmament of the full-fashioned group of manufactories. The point is made that if, instead of enlarging the original plant the owners had scrapped old machinery and replaced it with modern equipment of finer gauge, longer frames and higher speed, the cost would have been less than the price of the "improvement", and with the prestige formerly enjoyed by the mill and its product, there is no reason why it might not be reckoned among the leading producers and shippers in Philadelphia. "The former owners and their product had a reputation that should have carried the establishment through years of adversity punctuated with seasons of prosperity, but failed to collect", is the comment of one manufacturer, who cites a dozen or more illustrations of neglecting to look to the future while reaching out for the business of competitors. "I believe," he added, "that manufacturers now will profit for a time by the experience of themselves and others and would require only self regulation for putting the industry on its feet."

It would appear that the next few years will be a period of replacement, rather than expansion. Some of the rather recent innovations in hosiery will require new machinery or attachments for the modern that already is in profitable production, leaving antiques operated as heirlooms for the narrowing field of types of hosiery that are destroying their own markets.

The Used Machinery Situation

In nearly all lines with the exception of infants' socks, there is an unparallelled demand for used knitting machinery — unparallelled for the reason that apparently all that any manufacturer was willing to sell has been sold or withdrawn from the market. In fact, it is stated by dealers active in the movement of used machinery, demand embraces about every model of any sort of device that can be successfully used for knitting hosiery, underwear and outerwear. The inference among manufacturers is that hours of labor will be shortened by the Recovery Act Administration for creating more jobs, and that numbers hope to be able to meet the new

(Continued on page 105.)

Keeping Looper Points in Good Condition

EDITOR COTTON:

In "KNITTING KINKS" in the November issue, on page 100, "CONTRIBUTOR No. 6268" asked for suggestions as to what lubricant or treatment is best for keeping looper points in proper condition. This is a matter of equal importance to seamless and full-fashioned looping departments, and we should like to offer our suggestions.

Before going into any system of keeping the points in condition, I might say that it is primarily necessary to have them placed in the best possible condition. Points that have become tarnished or rough should be polished with either jeweler's rouge or some commercial solvent. We have found a commercial cleaner which we apply with a stiff stencil brush that is harmless, and cleans old oil accumulations from the points instantly.

Once the points are put in the best possible condition it is rather a simple matter to keep them clean and smooth, as well as free from tarnish. After experimenting with daily applications of needle oil, and frequently applying buffing polish and candle tallow, we decided to try a commercial point paste we saw advertised. The cost of this product was too small to be considered in comparison with the results we obtained, and now we feel that a specialized product is the best solution, where pride and care will be taken in keeping looper points shining like new.

Some mills have peculiar atmospheric conditions that tend to encourage a state of rust or corrosion. Oxidation of oil tends to tarnish points and equipment, and by using a commercial point paste it is not necessary to cover the points at night with oily waste, or apply needle oil. Old oil accumulations will not be found starting at the brass ring, and oil stains that make it hard to put fine gauge fabric on points will be eliminated.

Loopers that are directly under humidifiers always appear to be fighting a losing battle. We have frequently observed that some looper points seem over-buffed or severely polished, and to prevent this we recommend a commercial solvent that is applied with a brush. Some loopers have shown signs of tarnishing or rusting more than others, and in many such cases we have traced the cause to the acidic condition of the operator, the perspiration from the hands and arm being sufficient to effect corrosion. Most mills find that their points need care against this element in the summer months more than in the winter.

A daily application at closing time of a commercial point paste that has been scientifically prepared is the cheapest and most satisfactory solution for keeping looping or topping points in a proper condition.

While we cannot of course mention the trade names of the products referred to, this information will be made available to anyone specifically requesting the names from COTTON. CONTRIBUTOR No. 6306.

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WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

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Wants Figures on Seamless Machine Operation

EDITOR COTTON:

I would be very much interested in reading some discussion from mill men as to their experience on the number of seamless machines handled by one fixer. What is considered good practice on 260-needle machines, 54-gauge, 3½-inch cylinders, on 150 denier ladies' goods, string work?

Also, I should like figures as to the needles used per dozen, percentage of waste and seconds at the machine, kind of rayon, etc. Any reader may answer these questions, whether or not he is on the particular style of machines and goods listed, but each should give his details so that we may be able to compare. CONTRIBUTOR No. 6301.

What Time Is Necessary for Different Phases of Full-Fashioned Production?

Wants a "break-down" of time required for various elements involved in producing a set . . .

EDITOR COTTON:

I will very much appreciate receiving through "KNITTING KINKS" information from mills on the following points:

1. Production on full-fashioned leggers—a 4-thread stocking with 1,448 courses to the looper lines in heel tabs, two white stripes in welts, three picots, 35 narrowings in leg (8 below welts, 27 at calf) and four narrowings in heel tab. On a 24-section Reading legger with high speed of 60 courses per minute, what should be produced in eight hours?

It would be interesting to compare what is considered to be average time for yarn changes, welt turning, etc., but I have not found anyone yet who seems to consider anything except the total time of producing a set. Any data on this will be welcome.

CONTRIBUTOR NO. 6301.

Another Opinion on Handling Full-Fashioned Press-Offs

EDITOR COTTON:

In answer to "CONTRIBUTOR NO. 6253" concerning press-offs on full-fashioned work I will say that it is rather difficult to advise him as to the correct procedure for his plant. The methods he mentions in his letter are all used to advantage in their respective cases.

In our organization we lay down certain rules for the knitters as to the sorting of the press-offs. We are using learners for topping on complete sets on the finer gauge styles accumulated from various knitters. However, precaution must be taken that the stockings are not held over too long as a change of silk is likely to result in a two-tone effect.

In regard to the topping bar stand I see only one objection, and that is, the cost of the equipment. Again, we are using the learners to top the bars on the respective stands and deliver them to the knitter. This work is being done while the knitter is operating his machine.

Generally speaking, we are inspecting the press-offs and have a back-winding arrangement on our Atwood winders, drawing off the silk that would ordinarily be wasted by raveling and returning the press-offs in good shape to the operator, after the removal of the silk defects, or running them to an advantageous point in the leg.

The ordinary method, with two men working on one machine, is for one operator to top one or two press-offs while the other is turning welts. This is still adhered to.

The whole thing is a matter of time study to determine whether or not it pays to stop the machine off for topping on and to keep the topping expense within reasonable limits.

CONTRIBUTOR NO. 6264.

Wants Information on Seaming

Figures on production, etc., from both full-fashioned and seamless plants are requested . . .

EDITOR COTTON:

I have read with interest the various discussions on seaming full-fashioned hosiery by the contributors to the "KNITTING KINKS" department. The following are questions regarding the seaming of hosiery which I should like to have discussed by some of your readers in "KNITTING KINKS".

1. What is the best speed to run a Union Special seamer for production and good work on full-fashioned hosiery?

2. What production is possible on seaming full-fashioned hosiery inside out?

3. How many courses off of a perfect match at heels, narrowing, bottom of welt, and picot in welt, are inspectors permitted to pass without re-seaming? (We consider a stocking a re-seam if the stocking is off three courses at the heel or bottom of welt, or if narrowings are off more than the distance between two narrowings, or if the picot in welt does not meet. On this basis our percentage of re-seams averages two per cent. Is this a satisfactory condition?)

Our full-fashioned line is made up as follows:

Gauge	Ends	Silk
39	7	78%
42	4	85%
45	4	85%
48	4	85%
51	3	91%

I would also like to know what production may be expected on seaming seamless hosiery on Union Special and Merrow machines. Our seamless lines are as follows:

300 Needle	7-End	78% Silk
280 Needle	5-End	78% Silk
260 Needle	5-End	78% Silk

I would appreciate answers from readers based on any of these constructions, or on any that the readers themselves may be making.

I would very much appreciate a complete discussion of this subject by your readers, bringing out any other points on the question of seaming that might be of interest and value.

CONTRIBUTOR NO. 6298.

The Looper Course Stitch

EDITOR COTTON:

I notice in the August issue the question from one of your subscribers who wanted to know whether it is better to make a looper's course of looser stitch on the knitting machine, so as to enable the looper operator to find the proper course and stitches more readily, or, on the other hand, whether to make no difference in stitch from the beginning of the toe to the looper's round.

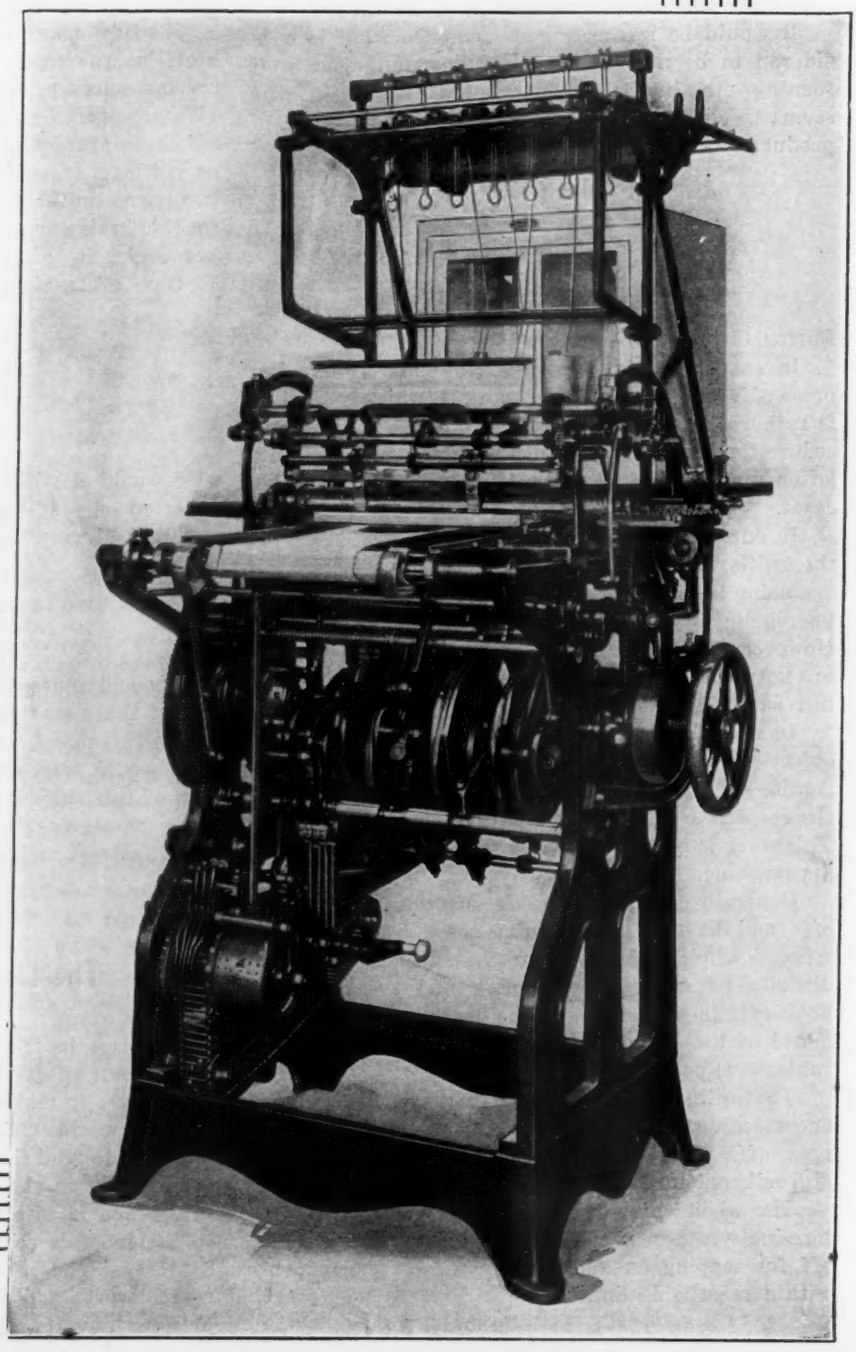
He said he is on 176-needle half-hose. This is coarse work, and should, according to my experi-

between the toe and the looper clip—I would say

If Obsolescence Is A Factor In Your Plans For 1934

WILDMAN
THE WORLD'S STANDARD

The
WILDMAN
SINGLE HEAD
Full-Fashioned
Hosiery
Machine



Literature on Request
WILDMAN MFG. CO.
Full-Fashioned Division
NORRISTOWN
PA.

ence, have a very small line or course of stitches about 25 per cent larger than the regular stitch. If this line is too large, the looper trimmer will cut holes; also, the knitting machine will drop stitches on this course. However, if no loose course is made for the looper to follow, she will very often split the stitch as she puts it on the looper point and this will not show up until the work has reached the boarding department.

My suggestion is to make a small looper course, but to make one on all classes of work.

CONTRIBUTOR NO. 6270.

Finishing Sheer Hosiery to Eliminate Crepy Stitches.

EDITOR COTTON:

In a recent issue "CONTRIBUTOR NO. 6215" asked, "What is the best method of de-gumming, dyeing and finishing sheer hosiery to minimize crepy stitches and give a good hand and body to the stocking?" and brought out that under present conditions the tendency is to use a thread number lighter than that for which the gauge of the machine was originally designed, aggravating the tendency of the machine to produce a sleazy fabric with distorted stitches, which might be improved by the means and methods used in degumming, dyeing and finishing.

Sleazy streaks in silk stockings are fairly common today because of the prevailing custom of running a lighter thread silk on the machine than that for which the machine is intended. The trouble is also aggravated by uneven conditioning of the silk—part of it being too dry and other portions being too moist. The maintaining of the correct moisture in the yarn while knitting is important in making silk hosiery since nothing which follows in the dyeing and finishing will entirely eliminate the sleazy places, once they are there. However, certain things can be done in dyeing and finishing which will tend to cover this defect up, but of course the thing is still there, but is treated to keep it from showing too badly.

There seems to be some difference of opinion as to which dyeing method to use, the one- or the two-bath method, and there is sufficient argument for using either method. I am personally partial to the two-bath method and my suggestions for covering up the sleazy places have been tried on goods which are first degummed, and rinsed, and then dyed in the regular manner.

In handling sleazy goods, we have found that chilling the goods any time during the de-gumming or dyeing process up to the final finishing bath causes the sleazy places to show more than if warm water is used each time a fresh bath is put into the machine. Start the de-gumming bath at or near a boil—do not introduce anything but warm or hot water when flushing and rinsing after de-gumming. The introduction of cold water seems to set the distorted stitches and they are more difficult to remove or cover up in subsequent processes.

Another precaution to take is to use a de-gumming agent, whether it be soap or degumming oil, which does not have too much free alkali in it. By keeping the pH low, the silk fibers will remain softer and will respond to finishing treatment more readily than if they are de-gummed in the presence of strong alkali.

To actually cover up the bad stitches after the goods have been de-gummed and dyed, it is necessary to use finishing materials which do a specific work. One ingredient necessary is a filler or sizing agent of some kind which will be absorbed by the goods and which will keep the distorted stitches lined up correctly while the goods are being boarded. The distorted stitches can be pulled out on the boards by bringing the stocking down on the board, but as soon as we release our hold on the welt, the stocking crawls back again, shortens, and the crinkles or sleazy places show up again—however, if we introduce a gum or starch or gelatine into the finish, it will tend to keep the stitches straight while the hosiery is being dried and it will set them so that after drying, the goods will not creep back, neither will the stitches become distorted again.

There are a large number of reliable finishes on the market today which accomplish what has just been mentioned in the preceding paragraph. We have found that by using a combination of a filler and one of the numerous splash-proofing compounds on the market along with some suitable softening oil to overcome any harshness in the goods or any tendency for the goods to stick to the boards while drying that we could overcome much of the trouble due to sleazy knit hosiery. The slight water-proofing seems to make the stitches more compact and incidentally gives the hosiery the appearance of being of finer gauge than it actually is. The filler gives body and weight to the goods and also helps keep the stitches in line while drying. The oil facilitates stripping the goods after drying and it gives the finished product a softer feel if such a finish is desired.

CONTRIBUTOR NO. 6238.

Answers Question on Toppers and Knitters

EDITOR COTTON:

I note the inquiry of "CONTRIBUTOR NO. 6261", who is knitting half-hose fancies on 176-needle machines, and asks opinion as to which is the better method—to have the operator on transfer seamless machines do her own topping or having the topping done by other girls behind the machine.

We ourselves are old manufacturers of 176-needle half hose and our system is to employ both toppers and knitters. There can be no definite rule regarding this matter based on efficiency, for after all it is a matter of the class and character of the help employed. We find it most convenient to use girls between 16 and 20 as toppers rather than use this same class of labor as topper knitters. If your correspondent has available an excess quantity of young men, the topper knitter idea would be most effective; on the other hand, if the preponderance of his help consists of young girls, these could best be employed under the separate system of topping and then knitting, and using boys for knitters. A

time motion study might indicate that a combination of knitting and topping includes less lost motion than that of topping and then knitting, for the knitter must reach for the transfer cups in the latter case. At the same time, there is also an argument for a knitter becoming more expert in actual transferring and knitting in the system we use, which is to top and knit separately.

CONTRIBUTOR No. 6266.

A Discussion of the Parts of Scott & Williams Knitting Machines.

Plates XXIX and XXX

(This continues the series of short articles discussing the machine parts on Scott & Williams machines, by taking up in order the various plates in the manufacturer's catalog with which all men using this make of machine are familiar.

The first article, on page 126, October 1932 issue, covered Plate I, Plate II, and Plate III; and the second article on page 86, November 1932 issue, covered Plate IV. The third article on page 97, December 1932 issue, took up the parts shown on Plate V. The fourth article on page 94, January 1933 issue, covered Plates VI, VII and VIII. The fifth article, on page 101 of the February issue, covered Plate IX. The sixth article, on page 73 of the March issue, covered Plates X, XI and XII. The seventh article, page 84, April issue, covered Plate XIII, and the eighth, page 89, May issue, described the parts on Plate XIV. The ninth article, page 81, June issue, covered Plates XV and XVI. The tenth article, page 97, August issue, discussed Plates XVII and XXI. The eleventh article, covering Plates XVIII and XXII, appeared on page 93 of the November issue. The twelfth article, covering Plate XXVIII, was on page 95 of the January 1934 issue.

It is suggested that in reading these discussions, the reader turn to the plate in question in the catalog and refer to it while reading the comments found in these articles. Furthermore, it will be a good idea to clip these discussions and file them in the catalog along with the plates to which they refer.

The numbers in parentheses following the names of parts are the same numbers used by the manufacturers in referring to the parts in the catalog.—The Editor.)

EDITOR COTTON:

Plate 29—S. & W.

This is a continuation of the discussion of parts for Scott & Williams Model K knitting machines. Taking up Plate 29, my remarks in connection with the various parts shown on this plate are intended for the plain Model K machine. Instructions covering the care and adjustment of thrust bars (7275, 7038 and 7277) were given in the parts discussion covering plates 17 and 21, which appeared some months ago in COTTON (page 97, August 1933 issue.) These instructions were given to apply to B-5 and B-3 machines; they can be applied equally well to the Model K machine.

The yarn shear thrust bar (7278) should move freely to assure cutting off yarns *at every yarn change.* It should *drop off* the cutter block *of its own weight,* and not be pushed down by the *shear lever spring.* Broken needle butts, broken or bent cylinder walls and numerous other troubles are very often caused by the auxiliary cam thrust bar (7280) not working freely. When this bar begins to stick or bind many fixers immediately tighten the thrust bar spring (6609) instead of trying to find out *why* it sticks. Tightening the thrust bar spring excessively will invite additional trouble by causing unnecessary wear on the lower end of the thrust bar and on the drum cams which lift it. The better way to remedy a sticky auxiliary cam thrust bar is to remove the spring, disconnect the auxiliary cam lever (8383—Plate 30), then test the bar to determine whether it will drop of its own weight or not. Usually it requires a little bending, straightening or polishing at one point or another to free it up. The thrust bar cam (7272) should be smooth and the screws kept tight. The loop forming lever bar (8274) and the push-out cam lever bar (8272) can be tested in a like manner as the thrust bar (7280). A great deal of trouble can be avoided if the three thrust bars just mentioned are kept in good working order.

The Switch Cam Bracket

The switch cam bracket assembly is very similar to those used on B-5 and B-3 machines and is adjusted in a like manner. Detailed instructions for switch cam adjustments were given in the discussion of Plate 16. (Page 81, June 1933 COTTON.) The Model K switch cam bracket is equipped with a leveling cam (7281). The purpose of this cam is to provide additional needle control; the use of cylinder jacks in Model K machines makes this necessary.

Several things must be kept in mind when fitting up new leveling cams or adjusting old cams. Keep the face of the cam as near to the cylinder as possible without binding. Make sure that the leveling cam does not interfere with the free up-and-down movement of the switch cam (7898). The correct height of the switch cam leveling cam (7281) is important. All needles which pass over the leveling cam while the cylinder reciprocates should be raised to the same height as raised by the upper center cam (7013—Plate 14).

The needle leveling cam (6521—Plate 20) must also be taken into consideration in order to secure a balanced adjustment of the cams mentioned. The needle leveling cam (6521) being above the needle butts will at times pull the needles slightly downward and thus disturb the needle level. Should this occur it will be best to first grind off slightly and re-polish either the top of the upper center cam (7013) or the bottom of the leveling cam (6521) and thus get a correct relationship between these two cams, then adjust the switch cam leveling cam (7281) to conform to the two cams just mentioned.

When the three cams (6521, 7013, 7281) are not evenly matched or fitted so they will keep the needles at an even level during the period of reciprocation, up-and-down motion of the needles will cause the knitted fabric to *creep up* above the nose of the sinkers. Pulling the fabric down again to the knitting position after it has crept up will cause gore menders, heel and toe waste from *cut* yarn or holes in the instep. Similar troubles can also be caused by improper sinker cam and sinker cap adjustments.

The Switch Cam

Some information pertaining to the switch cam was given in the discussion of parts shown on Plate 16. It read as follows: "The switch cam gives very little trouble on a plain machine where only long and

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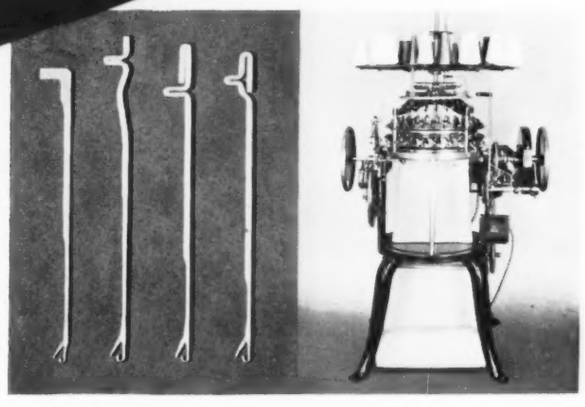
WE SUGGEST Torringtons. We make them . . . have made them for many years . . . and we know they are good. They are needles you can depend on; needles that will assist you, with every inch of their precise uniformity, to make a fabric which will *sell.*

Fabrics such as these made by the Salta Knitting Mills on the Brinton machine with Torrington needles are surely fine fabrics.



The Torrington Company

ESTABLISHED 1866

Torrington, Conn., U.S.A.

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THE TORRINGTON COMPANY,	538 SOUTH WELLS ST.,	CHICAGO, ILLINOIS
THE TORRINGTON COMPANY	UNITED BANK BLDG.	GREENSBORO, N. C.
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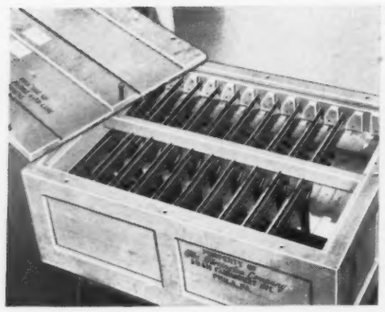
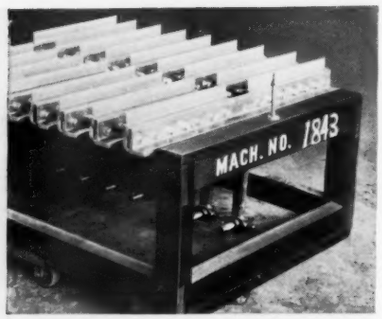
TORRINGTON *Latch* NEEDLES

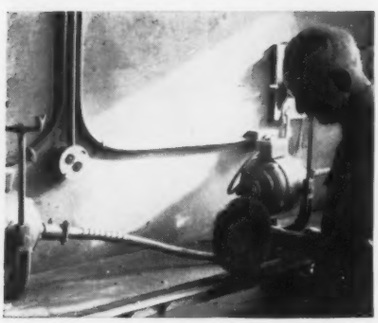


• At Torrington, we do an expert, thorough job of reneedling . . . putting your bars in the perfect working condition they *need* to be in for good, steady production. To begin with, we build sturdy cases, for shipping bars from your mill to the reneedling plant at Philadelphia. It's good to keep one on hand, for instant shipping. Cases come for bars with arms attached, or without.

• When your bars arrive, they are placed on individual trucks. They get a "job" number, and each job is kept intact



TORRINGTON *Reneedling* SERVICE



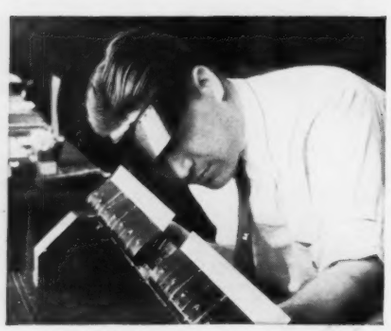
throughout the reneedling; you get back your bars with plates reassembled exactly as received.

• Reneedling at Torrington begins with a thorough cleaning of bars . . . by washing, in a special fluid . . . by scrubbing, almost polishing, with revolving brushes made for this. We replace all old papers with Torrington special "in-the-trick" paper—developed at our own plant—a paper that resists discoloration and pitting, helps to keep perfect alignment.

• We straighten all bars—with a simple but effective device which "springs" them

into shape. We straighten plates, too—and resurface the brasses taking out the high and low spots which interfere with even pressure on the needles. We check all slots—*mechanically*—opening up those that have closed, narrowing the wide ones.

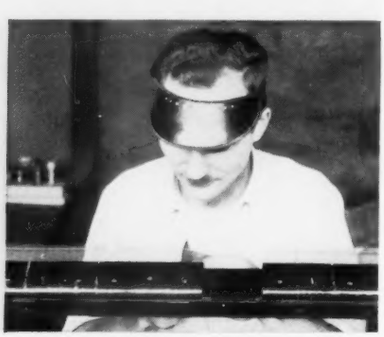
• Then we fill your bars with all new TORRINGTON needles; straighten the needles; gauge them three ways—(a) at the spot where they emerge; (b) a quarter-inch below the groove; (c) at the very top of the needle. For the sake of absolute uniformity, we *space* the needles by gauge, not eye.



• We raise the beards uniformly, and check them (with gauges, too) for height—and for central setting with the groove.

• Keeping machines in perfect condition as to needles is important to every knitter; and we have made a study of the best, quickest and most economical way to do it. We are equipped to do fast work (bars received one day can be returned the next).

• *Send your bars to the Torrington Philadelphia plant for reneedling.* You will like the reneedling job we do for you.



THE TORRINGTON COMPANY

ESTABLISHED 1866, TORRINGTON, CONN., U. S. A.

RENEEDLING BRANCH: 1640 FAIRMOUNT AVENUE, PHILADELPHIA, PA.

short butt needles are used. The principal requirements are that the bracket 6141 (5802 on Model K) be set so that the short butt needles will just pass in front of the switch when it is down while the cylinder is reciprocating. The point of the switch cam should be low enough to get *under* the long butt needles when the cam is *down* and high enough to get above the needles as they pass under the needle leveling cam when the switch cam is *up*. The low adjustment is made with an eccentric button fastened to the cam ring, the point of the switch cam resting on it while down. The high adjustment is made with the switch cam lever (6142) which is operated by the rod (6506). More exact cam adjustments must be made on machines using medium butt needles with various attachments."

The foregoing was meant to apply principally to Model B-5 and B-3 machines; however, it can also be applied to plain Model K machines. Using medium butt needles in connection with the double sole evening device on plain Model K machines makes it necessary to adjust the switch cam more accurately in relation to the needle butts. As far as the switch cam is concerned the medium butt needles are controlled the same as the long butt, the switch cam being set to just clear the short butt needles when it is down and raise the medium butt and long butt needles. When the switch cam is up it should lower not only the long and medium butt needles, but also the short butt needles in case of mis-picks and the like which cause short butt needles to remain up after the heel or toe is completed.

Additional Model K attachments such as reduced heel and narrow sole have made it necessary to increase the adjusting facilities of the switch cam and bracket assembly due to the necessity of using additional needle butt lengths. Such machines use four lengths of butts, namely, .255 for short butt; .300 for splice needles; .338 for medium butt; and regular long butt needles. On machines equipped as stated all needles except the .255 butt are raised when making the heel and the long butt only are raised when making the toe. Bent or broken needle butts are usually the sum and substance of switch cam troubles. They can be caused by badly worn switch cams but are more often caused by improper adjustments.

Very often machine fixers complain about excessive switch cam troubles the first thing in the morning, especially on cold days and on Mondays. Usually, it's a case of switch cams failing to come down all the way and needles jamming against the point of the cams. This particular trouble is not uncommon nor is it hard to overcome. It is usually caused by hardened oil in the switch cam bearing and around the switch cam roll (1604). The hardened oil makes the switch cam act sluggishly and prevents it from being pulled down by the spring (6596). A strip of fine emery cloth wrapped around a round file will clean out the hole in the bracket in a few minutes; the switch cam shaft can likewise be re-polished with a strip of fine emery cloth. Clean the roll screw (1605) and inner surface of the roll (1604) in a like manner and make sure that the roll turns freely when the bracket is re-assembled.

The cylinder hold down (5530) is used on machines only while they are in transit. The latch ring catch bracket (5194) has saved many latch rings from being damaged or broken, not to mention bruised fingers and the like for machine fixers or knitters, caused by latch rings falling suddenly while they were at work.

Plate 30—S. & W.

One of the outstanding features of the Model K machine is that it makes a smooth and elastic snug-fitting, inturned welt or hem. After many years it still is the only ladies' circular hose machine on the market having this feature and probably will hold this place of honor for a long time. The majority of the parts shown on Plate 30 are necessary to control the needles properly while making the hem.

The right and left stitch cams (7014, 7015) and upper center cam (7013) are of the same type as used on B-5 or plain machines. Considerable information including sketches pertaining to the care and adjustment of these cams was given in the discussion of parts shown on Plate 14. (Page 89, May 1933 COTTON.) Rather than re-write this information, I will ask the reader to refer to the discussion mentioned. (If you wish clippings, let the Editor know.)

The left side cam (7902), lower center cam (8254), and upper center cam bracket (7306) were also included in the discussion of Plate 14. Most plain Model K machines in use today are equipped with a swivel stitch cam (7015) which is part of the regular fashion marks attachment. This device will be taken up later as a separate item. It can be applied to various S. & W. models.

The plain Model K machine does not have an adjustable right hand side cam. The top of the left auxiliary side cam (7720) serves this purpose. The auxiliary side cams, right (7721), left (7720) give very little trouble when they are accurately fitted. In fitting up new auxiliary side cams, make sure that no openings are left between the right and left cam where they butt against each other. Also, see that the ends of the cams fit perfectly against the inner cam ring surfaces. The upper surface of the lower jack cam (7930) and the lower surface of the right and left auxiliary side cams should be kept smooth and free from nicks or rough places by re-polishing at regular intervals. Badly worn or nicked lower jack cams or auxiliary side cams will cause the jacks to vibrate or bound severely which will cause broken jack butts as they pass through the cam races.

In addition to broken jacks, cylinder walls will be damaged, needles broken and numerous machine troubles will develop. Grinding out nicks and re-polishing auxiliary and lower jack cams is a simple task, yet very often more damage than good is done by a careless fixer. When grinding and re-polishing these cams, remember that they *are* and *must be* exceptionally hard. Don't press the cam surface too hard against the grinding wheel, especially if you are using a fine grit wheel on a high speed grinder. Cams are easily *burned* by *careless grinding*. Have a vessel of water handy; dry the cam after dipping.

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Actual photograph showing more complete dye-absorption of Aberfoyle Durene Yarns.

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Mercerized by our new, exclusive process, Aberfoyle Durene Yarns have such an affinity for color that a perfect match is achieved from the first dye bath. So easily and quickly does the yarn absorb the dye that the colors are invariably brighter, with much more character, enhancing the beauty of the fabric.

Requiring less dye, and practically eliminating re-dyes, lustrous, level-dyeing Aberfoyle Durene Yarns assure you superior and economical production.

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MILLS: *Chester, Pa., Belmont, N. C.*

An incident in connection with cam grinding comes to mind as I write these lines. At the time I was head fixer in a mill having about 500 Model K machines. One of the younger fixers who came from another mill complained about having a lot of trouble with broken picks. He was forever tearing machines down and working on jack cams. I asked him to show me the next set of jack cams he had trouble with, and he did. They were badly worn and beyond repair.

Testing the surfaces with a file told the story. The cams had been burned; the temper was gone. Little wonder that jacks were being broken. The boy proceeded to re-grind the cams and did he burn 'em up! They got plenty blue before he was half through. When I called his attention to the discoloration of the metal, he simply said, "Oh, that *rubs off* when *I slick the cams up on the buffing wheel.*" True, it did, *but* the damage was done and no amount of "slicking" would put temper back into those cams. Then and there he was taught how to grind and polish cams.

Brother, are you burning cams instead of grinding them?

The Jack Gate

Jack gates seldom give trouble due to the fact that they are perfectly fitted to the cam ring at the factory and are held in position by sturdy screws. If for any reason it should become necessary to renew a jack gate it is best to remove the cam ring from the machine and fit the jack gate to it, making sure the inner surface of the gate and the cam ring match perfectly. This will prevent broken cylinder jacks, damaged cylinder walls and the like. When jack gates are removed for any reason, make sure that they are replaced carefully and the holding screws tightened securely.

The Medium High Splice Cam

The medium high splice cam (8304) does not require a great deal of attention once it is properly fitted. Medium high splice cam troubles can be divided roughly into two classes: mechanical troubles such as broken needle butts, bent cylinder walls, etc.; and knitting troubles such as an irregular double sole line on either side, dropped stitches, etc. As a rule improper fitting or adjustment of the splice cam is the underlying cause of the different ailments. They can, however, be caused by excessive needle friction, bent cylinder walls which cause the needles to be tight in places or scarred needle butts caused by the splice cam itself or other cams. Irregular double sole lines can also be caused by the double sole finger and its controlling mechanism.

All of the old Model K machines were equipped with high splice cam controlling mechanism as shown on Plate 30 and consisting of the following parts: High splice cam rod (6921), collar (6924), spring (6923) and gap closer lever plate (8306). The rod collar (6921) is used to pull the splice cam out of action and the spring to hold it in action, the necessary motion being supplied by the lever (5528) and plate (8306). The rod (6921) must work freely in the hole of plate (8306) and be kept reasonably straight to prevent the spring from binding. Frequently tight cylinder walls, bent or damaged needle butts, will throw the splice cam out of action resulting in additional needle damage.

Few medium high splice cams fit a Model K machine perfectly as they come from the factory. It would be difficult to make them so they would. In order to simplify fitting, this cam is made amply long so the operating end which comes in contact with the needles can be ground to fit the individual machine. The cam is tempered only where it comes in contact with the needles, the remainder being left soft so that it can be bent or twisted enough to make it lie properly in the groove of the stitch cam bracket provided for it. The angle of the operating end must conform with the angle of the stitch cam, *never steeper.* The needles should be drawn down in the same manner as they are drawn down by the stitch cam, except earlier.

The fact that the splice cam operates only on the outer edge of the needle butts makes it *doubly* important that it be fitted carefully and accurately. Haphazard fitting and guesswork will surely lead to trouble. When the splice cam is in action the shank should rest against the stitch cam bracket and the inner surface of the operating end should just clear the medium butt needles, getting as much cam surface to act on the long butt needles as possible. The collar (6924) should be set near enough to the plate (8306) to prevent the long butt needles from rubbing against the splice cam face when the cam is out of action.

New splice cams will occasionally draw the long butt needles down too low and cause dropped stitches in the long butt portion while the cam is in action. This can be overcome by grinding off the lower part of the cam or by bending it slightly upward. Excessive needle division by the splice cam is not necessary; merely enough division to assure ample space to lift out or drop in the double sole yarn.

In this discussion I stated that the old Model K machines were equipped with a medium high splice cam controlling device as shown on Plate 30. Additional refinements such as reduced heel and narrow splice and sole attachments made it necessary to change the high splice cam controlling device. A simple yet very effective device was developed several years ago which can be applied to all Model K machines at a very nominal cost. This will be taken up as a separate item later.

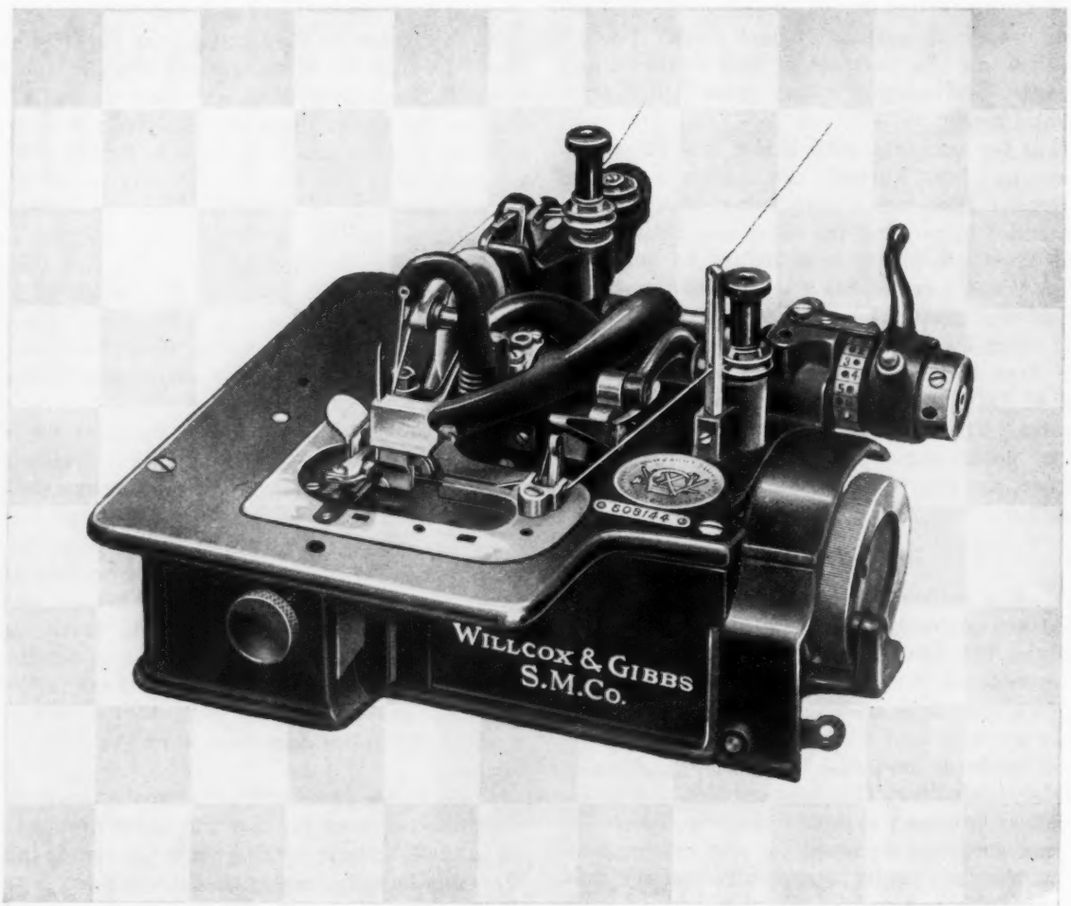
The next discussion will cover the remaining parts shown on Plate 30.

CONTRIBUTOR NO. 6038.

Knitting Arts Exhibition, April 23-27

Plans are under way for the 30th annual Knitting Arts Exhibition, which will be held at the Commercial Museum, Philadelphia, April 23 to 27 inclusive, under the auspices of the National Association of Hosiery Manufacturers and the management of Albert C. Rau. All indications are for a successful exhibition, and knitters convention, held in conjunction.

THE WORLD'S FINEST SEWING MACHINES



THE OVERLOCK

NRA MEMBER U.S. WE DO OUR PART

THIS machine has never been surpassed for the perfection of its clean-cut, finely worked, uniform stitch. If it were not for the Overlock, the beauty of seaming and hemming, so important a factor in the make up of the world's finest garments, would not at all be possible.

WILLCOX & GIBBS
SEWING MACHINE COMPANY

WILLCOX & GIBBS DEPOSE SEWING MACH. CO. NEW YORK

HOME OFFICES

656-658 BROADWAY, NEW YORK, N. Y.

New Willcox & Gibbs Machines and genuine Parts may be purchased only from company's offices

Oil Versus Soap for Degumming

EDITOR COTTON:

The letter of "CONTRIBUTOR NO. 6088" in July COTTON is quite interesting, as it brings up for discussion a matter that has been the subject of many arguments. He asks which is better for de-gumming silk hosiery—oil or soap; and for a discussion of the one and the two-bath methods of dyeing.

Silk dyers of the old school would never think of using anything but olive oil soap for de-gumming silk and silk fabrics in any form or mixture, but since hosiery manufacturing has become so prominent a factor in the silk industry such a large quantity of it had to be dyed by what is called the "dip dyeing" method, and so many cotton hosiery dyers have been called upon to dye silk hosiery, a new school of dyeing sprung up to change the order of things, facilitate the processing of hosiery and make it possible for a number of dyers in all parts of the country to adapt themselves to the new order of things.

There have been some attempts to de-gum silk with specially prepared de-gumming mediums other than soap, but these attempts had been heartily discouraged by the silk dyers of the old school for the reason that the broken soap of the de-gumming baths was considered a very vital necessity in the subsequent dyeing of the de-gummed silk, and when oil or any other medium was used the de-gumming bath was useless for their dyeing bath. Since the dye manufacturers evolved dyestuffs that dyed level shades in baths made up of water and Glauber salt, de-gumming with oils got a fresh start. When introduced to the hosiery dyeing industry they were adopted by some dyers, while others still looked askance to the de-gumming oils as boil-off agents. To many soap is still the ideal boil-off agent. No amount of persuasion will induce them to think otherwise. They get results with soap, they are used to it, and they keep out of trouble with it, so why should they change?

As to the respective merits of de-gumming oils and olive oil soap in de-gumming hosiery, this writer has been of an open mind since entering the hosiery dyeing trade. Having been a silk dyer, I was naturally partial to soap. A number of trials with degumming oils made it apparent that there were merits in them for some class of work and of indifferent value for some other.

In dyeing hosiery containing mercerized cotton and silk, results were obtained that were quite gratifying with both soap and de-gumming oil because we always insisted on dyeing in a clean second bath with Glauber salt, and with or without acid. We could never quite agree that better results could be obtained by dyeing in the de-gumming bath. There are too many impurities carried in this bath by the silk. There are the oils, softeners, and, worst of all, the throwster colors to fight in this bath to make, in our opinion, a perfect job of dyeing by this method, and we cannot see that even the sheerest of fabrics can be successfully dyed in one bath, and as far as saving time, the dyeing by this method is so erratic that we prefer to stick to the two-bath method with all our styles of hosiery.

We do, however, use the de-gumming oil to boil off and dye in the same bath hosiery that has cotton, rayon and silk in it. We have found that with hosiery containing rayon, it is almost impossible to wash out thoroughly the soap used in de-gumming three-fiber hosiery. There is always some of the oil from the rayon that breaks up in the goods degummed in soap, and impregnates the hosiery, that we came to the conclusion that boiling off and dyeing in one bath of de-gumming oil is the best thing to do to obtain good results.

What has been said is in regard to dyehouses that have a purifying and softening water system. With plenty of soft clean water, soap can be relied on to do a good job of boiling off and washing it out of the goods is an easy matter. Not all the dyehouses, however, are so fortunately provided for. With hard water, or water coming from any old place and its purity is of unknown quality, de-gumming oils are much to be preferred to soap in degumming silk hosiery of all kinds and mixtures. Experienced dyers have come to recognize that fact, and after all is said and done, the best policy is to let him decide whether soap or oil is the best medium for boiling off and dyeing his goods. He is the best judge if he has that knowledge, and if he has not—he has no business in the dyehouse.

CONTRIBUTOR NO. 6127.

General Resume of Knitting News of Interest to Knitters

(Continued from page 93)

conditions by putting every available machine to work. As the investment in used equipment is on a relatively modest scale, it was suggested by a machine dealer, and most changes in codes are regarded experimental, second hand machinery became an asset of no little importance.

The extent to which the use of ancient equipment may be affected by some proposed code restrictions may prove disastrous to the hopes or plans of some recent investors in the archaic.

Simultaneous with the ado over standardization is the proposal for a uniform system of cost finding for the hosiery trade. The question arose in a recent informal conference whether, if a manufacturer improve on either established standards or cost accounting plan, he might utilize his improvements in his business.

While virtually no used full-fashioned equipment is offered, there is a readiness to lease existing plants favorably located. In a case in point, a lessee of a rather ancient mill, with an option to acquire by purchase, to be exercised in a comparatively few weeks, has made overtures for leasing a plant now idle. The owner is willing to sell, but will not lease. It appears that new equipment soon will be replacing the kind that manufacturers are willing to operate under short lease but not willing to buy.

When you buy needles

We *make* needles. But—what we *sell* and, what you *buy*, is the *ability* of those needles to produce a better fabric at a lower cost. You value Royersford Needles for the work they do—the quality and quantity of the stockings they make.

That we are America's largest producers of Spring-Beard Needles, and that nearly all manufacturers of fine quality stockings are standardized on ROYERSFORD is a tribute to *satisfactory performance.*

ROYERSFORD NEEDLE WORKS, Inc.
America's Largest Makers of Spring-Beard Needles
Main Office and Works—Royersford, Penna.
Southern Office—Provident Bldg., Chattanooga, Tenn.

The prescription for better knitting

ROYERSFORD NEEDLES

THE KNIT GOODS MARKETS . .

EBBING and flowing of the consumptive demand for women's full-fashioned hosiery in less than a decade of economic ups and downs may be viewed as foreshadowing difficulties to be encountered in attempts to adjust production to a time basis for maintaining anything like a near balance of output and distribution. Code authorities have had experiences with a variation in maximum weekly work hours from 48 to 80 and a return to the latter schedule after five weeks of operating on the restricted basis.

Observers of results from both schedules point out that within a week after the schedule was reduced from 80 hours to 48, quotations on some types of full-fashioned stockings declined and that following a return to 80 hours declines were more general and buyers for the trade more confused than prior to the 40 per cent curtailment effective in December last. That experiments to last month failed of producing the output-consumption balance looked for, it is commented by observers, is no reflection on the acumen and integrity of those comprising the code authorities, for back in 1925 at least two of the better known manufacturers, in widely separated sections of the United States reported a surplus production by the industry in 1924, as marking the end of material plant expansion.

Both prepared reports for the 1925 "Annual" of the Silk Association of America and are quoted in the book by Dr. George W. Taylor, "Significant Post-War Changes in the Full-Fashioned Hosiery Industry." The two manufacturers whose comment and forecast nine years ago are especially interesting at this time, when some of their compeers are wrestling with the problem of correcting a condition which was described as existing then, are:

T. Walter Fred, president, the Davenport Hosiery Mills, Chattanooga, Tenn.

Edward Freschl, president, Holeproof Hosiery Co., Milwaukee, Wis.

Mr. Fred: "On account of apparently a surplus production of silk hosiery during January and February (1924) in the face of something like a 50 per cent advance in the cost of silk, several full-fashioned knitters reduced their prices slightly."

Mr. Freschl: "The outstanding fact is that 1924 was emphatically an unsuccessful year for the manufacturer of textiles in general and silk hosiery in particular. The principal cause of this unfavorable condition was the over-expansion in the industry, which has led to over-production and, consequently, lower and more unstable prices. In the past few years the demand has changed rapidly from a long wearing cotton hose to the less durable silk hose. This naturally resulted in a greater per capita consumption and, therefore, developed an abnormal market expansion. The results of the past year (1924) indicate that this abnormal expansion nas about reached its limit and the industry is settling down to a basis comparable to that of other well-established industries, where the buyer's market is the rule."

The production of full-fashioned hosiery in 1924, when Mr. Freschl predicted abnormal expansion had about reached its limit, was approximately 12,000,000 dozen pairs, according to statistics compiled for that period which, as developments soon indicated, marked the beginning of actual expansion, production in 1929 amounting to the relatively staggering volume of around 31,000,000 dozen pairs. This was the reaction to an actual scarcity of full-fashioned stockings in June, 1925, as chronicled in Dr. Taylor's book, which states in that connection that about that time there occurred a rapid increase in full-fashioned production, the "elimination of marked seasonal fluctuations", and a "noticeable decrease in seamless output".

One of the outstanding facts about the full-fashioned hosiery industry in 1932, Dr. Taylor stated in a report of June 12, 1933, covering a survey, was that it produced almost as much hosiery as was produced in 1929, the year of peak production, with the operating of only 58 per cent of the capacity. The output in 1932, according to statistics covering that period, was about 28,000,000 dozen pairs, some statisticians say nearer 30,000,000. It is easily conceivable that consumption increased by more than 200 per cent in seven years. One estimate places the increase in production at 250 per cent from 1924 to 1930.

To keep pace with increases to come by reason of a fast increasing population and adaptation of prices for full-fashioned hosiery to improving economic conditions, it is suggested by some interests that either more hours and less equipment or fewer hours and more equipment will be necessary for averting repetition of the shortage which is officially reported as occurring in 1925.

Commenting on the decreased production last year and the 1932 shrinkage from the 1929 peak, economists point out that the decline in full-fashioned hosiery due to the depression was only a fraction of that which was experienced in many industries, steel output at one time having dropped to 20 per cent of that under normal industrial conditions.

On the basis of the more recent censuses of population of females over sixteen years of age and actual distribution of full-fashioned hosiery, the average urban consumption is at least twelve pairs per year, and in rural sections one half that number. This would require a production of around 360,000,000 pairs a year.

Surplus Stocks of Low Price Hosiery Reduced During Post-Holiday Severely Competitive Selling

As there were no increases in prices for silk full-fashioned hosiery during the five weeks curtailment by 40 per cent from the original 40-hour week, which was restored about the middle of January, it hardly was to be expected that prices would show improvement from the standpoint of stability when the mills returned to the 40-hour schedule. Nor was probably any division of the trade—manufacturer, jobber and retailer—expectant of such declines as were recorded early in February in some of the lower grade numbers.

There seemed hosiery aplenty for retail prices as low as 69 cents a pair for presumably first grade of standard full-silk 45-gauge construction. That was a common price in the regular course of business in some leading stores, and placards displaying even lower prices were displayed in shop windows. There has been well sustained demand for 42-gauge four thread silk goods, but values were not sustained in the marketing to large retailers. A low quotation last month, heard frequently in Philadelphia, was $5.15 a dozen, which was 10 cents more than some mills were asking for standard 39-gauge, while jobbers were offering $4.80 and obtaining supplies from a few mills at prices under $5 a dozen. A very good number in five-thread silk of 51-gauge build was available to jobbers at around $9.50 a dozen.

Manufacturers sought to increase their prices, but offerings by some stores at such prices as 69 cents a pair for silk chiffons, 45-gauge, with jacquard lace top, made it appear useless to quote higher in expectation of consummating worthwhile sales and giving the general market a lift. The lowest special price for proven true ringless encountered in the post-holiday selling was 89 cents—the stockings having been taken out of stock after a price of $1.25 had been maintained, although proving not attractive. Buyers for some leading stores say it is going to be hard sledding for those who are trying to get volume business in hosiery at $1 a pair and more.

Some operators in the primary markets assert the better margin of profit is returned from sales of 39-gauge hosiery, which is believed to be less plentiful than a year or two ago, as a great deal of equipment of that gauge has

Telling the Knitting Trade of A New Model for 1934

H-L *yarns*

HIGH LUSTRE

JUST as car owners are waiting for the new models in automobiles for 1934, so are many hosiery and underwear manufacturers waiting for a new and better yarn. Boger & Crawford now announce their contribution for the New Year —a new *High Lustre* yarn which is an already good yarn made even more beautiful by a new high lustre. The cost is just a trifle more than regular mercerized yarns in counts from 40/2 to 120/2. Our salesman will gladly call for demonstration on request.

BOGER & CRAWFORD

J and East Venango Sts.

Philadelphia, Pa.

been permanently dismantled. Probably the more popular numbers so far this year are 42- and 45-gauge, in especially strong call in the gray.

Fairly good four-thread 42-gauge were to be had for $5.35 a dozen, while the Berkshire Knitting Mills was reported continuing to quote $5.75. Among some of the well seasoned buyers for the trade $5.50 was regarded a basic price. They balked at paying more and looked askance at goods offered for less, but willing to trade, sellers' descriptions guaranteed. An up-state Pennsylvania manufacturer received an order for two cases of silk irregulars, 42-gauge, to be guaranteed ringless. No sale, of course, probably no hosier of sufficient caliber to acquire and operate a mill having descended to the practice of guaranteeing irregulars.

Prices for women's full-fashioned hosiery appeared late in February to be on the mend. Notwithstanding there was less buying than usual in the first two months of the year, it was more difficult to locate distress goods late in February than during January, as if low quotations on popular price numbers had the effect of clearing the market of lines affording opportunity for speculation. Odd lots and what are termed "jobs" were scarcer. Some dealers in this class of merchandise found it more difficult to buy at their price than to sell at their customers' price.

Necessarily there was a scurrying for hosiery for the Easter shopping period. This helped to stiffen the spines of mills over-eager to sell. It was a fear among mill chiefs that in their anxiety to sell, some manufacturers might offer price concessions. A dull period following Easter seems not improbable, as, it is expected, dealers will continue to buy with extreme caution, since there was some disappointment over the failure of Christmas sales to attain the usual holiday volume.

Markets for True Ringless Stockings Broadening While Confusion over Patents is Being Unscrambled

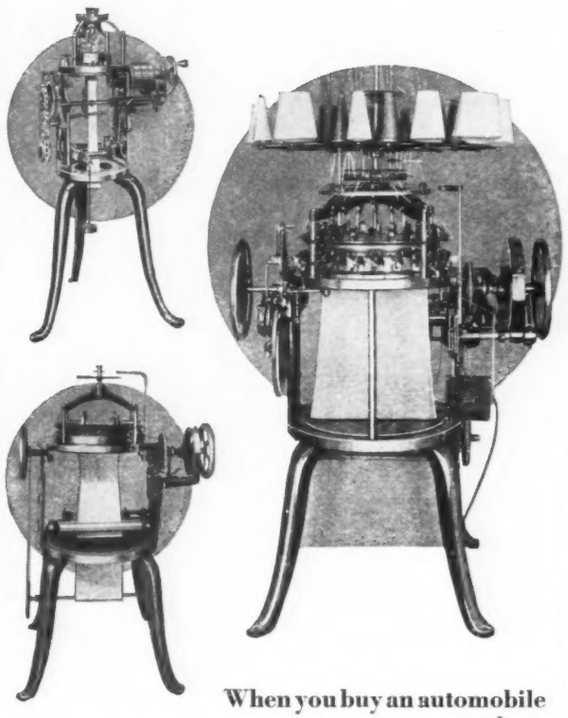
The outstanding post-holiday sales event was the Bamberger company, Newark, N. J., offering of a lot described as aggregating 20,000 pairs of 42-, 45- and 48-gauge at 55 cents a pair. Dealers suspecting some violation of the hosiery code might have accounted for the low price, bought a few pairs each and sent them to the code authority. There was nothing to indicate the stockings were other than first quality of their kind and not discontinued numbers. Some were said to have failed to pass a rigid test for perfects. A leading supplier to retailers states that as experts often fail to agree in their findings as to grade, mechanical inspection would appear to be necessary.

As to making an exception of discontinued numbers in the matter of observing the code provision that no hosiery is to be sold below cost, manufacturers have been heard to say that surveilance of some mills might be necessary for ascertaining whether hosiery stamped "Discontinued" might not be slipped into distribution at a competitive price on a considerable quantity of a number taken out of production for the specific occasion, and its manufacture resumed following dealer sale of the lot. That is, suggested one mill man, provided the stamping "Discontinued number" be not construed by shoppers as implying not first grade.

Since it has been shown to the satisfaction of doubting manufacturers, and to buyers for the trade who were skeptical, that black stockings, chiffon, medium and service weights, are being produced absolutely free from rings by use of the three-carrier attachment, that type stocking, still a novelty, in a sense, but fast becoming a staple, is coming into favor more rapidly than its more enthusiastic producers had hoped for.

Price has stood in the way of volume selling of the ringless. Now that buyers for some stores have stated they will stock no silk hosiery that cannot safely be guaranteed ringless, it would seem that objection has been overcome. Such a guarantee, it is held, would go far to increase sales and, with increasing production, there would be effected savings in cost. It was proved in a popular ready-to-wear shop for women that while customers rebelled at paying $1.25 a pair, there was virtually no objection to 89 cents as a special sale price for three-thread 45-gauge.

MODERNIZE *your* PLANT *with* BRINTONS



Ribbers of every type.

Jersey Machines Plain and Fancy Stitches.

Rib Body Machines For Underwear and Bathing Suits.

Sweater Machines Rib and Jersey Types.

Special Knitting Machines From ¼ inch to 36 inches.

When you buy an automobile —you are sure to purchase a car with a proud performance record. Why not apply the same excellent logic when you equip your mill with knitting machines? The name Brinton stands as high in its field, as Rolls-Royce, Packard, and Cadillac in the automotive industry.

Depend on Brintons

H. BRINTON COMPANY

3700 Kensington Ave., Phila.
New York Office: 366 Broadway

BRINTON CIRCULAR KNITTING MACHINES

of EVERY Kind for EVERY Purpose

THE READING

FULL FASHIONED KNITTING MACHINE

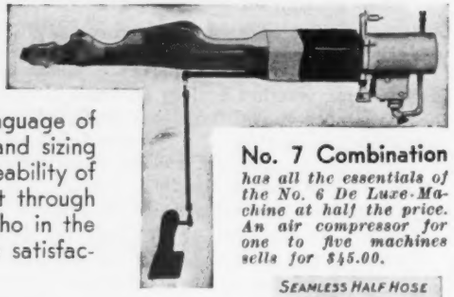
TEXTILE MACHINE WORKS • READING PA.

INCREASING HOSIERY SALES BY THE USE OF AMMON-IZED HOSIERY INSPECTION

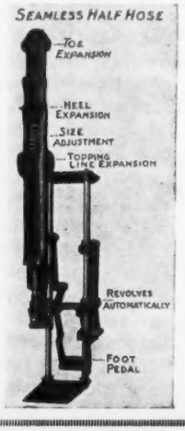
Edward R. Ammon

Mr. Manufacturer:

Talk to your customers in the language of Ammon-ized perfect inspection and sizing which assures 100 per cent serviceability of hosiery, and in turn brings profit through the retailer's great big public, who in the mass, are looked to for ultimate satisfaction and repeat sales.



No. 7 Combination *has all the essentials of the No. 6 De Luxe-Machine at half the price. An air compressor for one to five machines sells for $45.00.*



Automatic Counting . . . Automatic Detection of Weak Places in Fabrics . . . And Now Automatic Measuring for True Foot Sizing.

In Ammon-ized Inspection balanced pressure is applied to all parts of the stocking in conformity with the degree of stress that is put on the stocking in actual use. Never too much pressure at one point, nor too little at another . . . that's where the Ammon machine is distinctly superior.

Get Greater Production . . . Better Quality.

EDWARD R. AMMON, Inc. Reading, Pa.

While hosiery in any shade or color can be and is being knitted ringless, some that has been sold under that description proved to be otherwise. Of two pairs bought in two stores as ringless, one was discarded because it was ringed, although the blemish was not apparent until the stocking was on the leg. The other was perfect, it is related by the person who had the experience with both.

While the marketing of ringless silk hosiery from several sources seems to have gained considerable momentum, the situation as to control of the several inventions applying to ringless fabric and the mechanism for producing it, was still being unscrambled late in February. By the time that process has been completed, probably more owners of patents than originally were reckoned with may sit in when distribution of the "gravy" is taken up, as seems to have been indicated in a "warning" issued by a group of machine interests and followed by an announcement by Alfred Hofmann, Inc., of "striping attachments suitable for the manufacture of 'so-called' ringless stockings."

A Test on "Non-Run" Hosiery

One of the admittedly better informed buyers of hosiery for department stores, commenting on "limitless potentialities" for non-run hosiery, exhibits a report of a very recent test by a woman's organization, which was conducted under careful supervision. Of 36 pairs of stockings worn by members of the organization five developed runners on first wearing, five on first laundering, 16 lasted less than a week, six held out for a week and the others for 10 days to two weeks, except seven pairs, which still were in commission at the time the report was received by the hosier late last month. Only two developed holes in the fabric, other than runs, the holes appearing in either the toe or the heel. The report is cited by the hosier in question as assurance that women will flock to the wearing of non-runs "if not presenting a mesh appearance or some radical departure from present popular construction that may run."

An important announcement clarifying the situation as to the status of ringless patents and pending applications for patents for such inventions, was expected to be ready by early March from Attorney William R. Smith of the Textile Patents Corporation. It may be significant that the Textile Machine Works, one of the closest affiliates of the Textile Patents Corporation, recently procured two ringless patents issued by the Canadian government to Gustav Castrich, assignor to Textile Machine Works, who have applications pending for U. S. patents covering the same inventions.

The Canadian patents bear numbers 337,373 and 337,374. One relates to an entirely new type of non-run fabbric, it is stated, and the other to a balanced arrangement of lock stitches in a non-run fabric of conventional type.

The first of these patents covers a non-run fabric differing in appearance and construction from those marketed here, and consisting of a succession of plain and tying courses; no interlocking loops of the type heretofore embodied in non-run fabrics being present. The forty-five claims of this patent broadly cover the invention.

The feature of the second patent resides in the novel arrangement of interlocking loops throughout a non-run fabric which imparts to such fabrics run-resisting qualities not heretofore present therein. This patent contains twenty claims.

Five Philadelphia Department Stores Agree To Hereafter Offer "Menders" as Thirds

Five department stores in Philadelphia will offer no more hosiery "Thirds" that are not so identified by a proper marking. An understanding to this effect was arrived at by the respective hosiery buyers after Joseph A. Harron directed their attention to a violation of the code in displaying menders not described as "thirds."

Mr. Harron is general manager of the Harron Hosiery Co., Philadelphia. When he saw an advertisement of a store offering four pairs of silk stockings for 88 cents his suspicions became aroused and he walked in on the buyer, whom he soon convinced of the error of his way. Prices in four other stores had a suspicious sound to Mr. Harron, and all the buyers, pleading ignorance of a code definition, were brought into an accord to neither buy nor offer for sale any thirds not so marked for the guidance of shoppers.

This purification was accomplished soon after the commencement of the post-holiday special sales in department stores, and since then advertisements of women's silk hosiery at two pairs for 25 cents read, "would be 39 cents if perfect; to comply with NRA these have been stamped thirds." Also "All menders—marked thirds to comply with the NRA." One store advertises Full-fashioned silk stockings 19 cents a pair, "classed thirds". A "serviceable quality of Chardonize at 12½ cents a pair is marked thirds to comply with the code." Fine gauge pure silk hosiery for women at 39 cents, are described as having picot top and French heels and are exploited as "menders, termed thirds".

Reports came out early in January of returns of considerable hosiery, stamped "thirds" on the toe, bought during the pre-Christmas shopping period. It seems that comparatively few of the women pawing over displays on bargain counters surrounded by throngs of shoppers looked at the toes until reaching their homes, when they proceeded to wrap the stockings to be forwarded as gifts. A retailer displaying thirds but not so describing them to customers pointed to a marking so indistinct that "he failed to notice it". It seems he had bought the stockings from a huckster of "jobs" and odd lots.

The hosiery code provides only three classifications—Firsts, Irregulars and Thirds. Manifestly, menders belong in the latter category.

Knitting Room of the Wilkes Hosiery Mills Company, North Wilkesboro, N. C.

Courtesy, Hemphill Company, and the Wilkes Hosiery Mills Company

This photograph, which shows a large installation of wrap stripe machines, appeared on page 131 of the February issue of COTTON. Through an unfortunate editorial error, it was referred to as showing a view in the "Wilkesboro Hosiery Mills." The correct title of the well-known plant in which the picture was made is Wilkes Hosiery Mills Company, and it is located at North Wilkesboro, N. C. We are glad to publish this correction, with an apology to the Wilkes Hosiery Mills Company for the error in listing its name.—Editor . . . . . .

Women's Fine Cotton Underwear Retailing Promoted by Styling, to Detriment of Rayons

The styling of women's fine cotton underwear, which last year was given more attention than had been devoted to the promotion of sales of cottons, is said in some leading department stores to have been an important factor in diminishing sales of rayon underthings for women. In fact, some buyers for the trade are of an opinion that women's rayon underwear has lost its hold on womankind as a fall and winter volume seller. Those taking this view ascribe last year's decline in sales of women's rayons in part to the favor with which woolies, snug fitting and giving

warmth, were received. The present winter was especially kind to manufacturers of woolies and spring needle and tuck-stitch cottons, according to managers of underwear department in some of the more important stores. Woolies, it is stated, represent one item, demand for which was not affected by what appeared to some as high prices for wool.

One conclusion to be reached in accounting for the decline in sales of women's rayon underwear is that use of cheapened fabric and skimping in the shaping of the garments had much to do with the falling off. After one or two unpleasant experiences with "price" rayons, women discarded them from their wardrobes, this action being more common by reason of the low cost of silk, and cottons were given a trial for service and style, with the result that carefully tailored numbers were "scat" for rayons, in great extent—this on the word of some of the larger quantity buyers for retail stores. This seems the more significant when it is considered that use of trashy underwear in actual service arouses no criticism, while in the case of hosiery a very slight blemish may cause embarrassment for the wearer.

A fairly large volume of business in men's and boys' heavy weight cotton underwear has been taken by most of the more important mills. While numbers of jobbers contracted for a large part of their estimated requirements, it was the common belief when several lines were withdrawn preparatory to an upward revision in prices, that quite a few had overstayed their market and will have to do their buying at even higher prices.

Buyers who rushed the market when yarns were advancing at the rate of around two cents a week barely got under the wire with offers of orders on a basis of $6.62½ a dozen for average 12-pound union suits, some manufacturers early in February being undecided whether to accept additional business at the then existing quotations of most mills. Compared with a previous price of $3.87½, current quotations obviously seemed to represent about all that a considerable element in the retail trade professed to believe the traffic would bear. This year the manufacturers of cotton heavy weights are in the saddle notwithstanding the curtailment of the cotton crop, the processing tax, increases in labor cost and other additions to operating expense, calling for last month's new price list of $7 for 12-pound suits. 62½ cents more for 14-pound and $8.25 for 16-pound from northern mills, as set, it is assumed, by the Blood Knitting Co. The first major line reported withdrawn from sale was that of the P. H. Hanes Knitting Co.

It was an opinion of some leading jobbers last month that in the event cotton continue to rise, manufacturers probably will make less underwear for stock. It appeared that only firm orders would count in the production campaign of most northern mills, even though the industry's code be so modified as to provide for only 35 or less machine hours per shift.

Trading in men's summer weights was in rather disappointingly low volume last month, being stimulated, however, by withdrawals of heavies and upward revisions in prices. Fairly good business in women's popular price cottons is reported on the books of some of the up-state Pennsylvania mills.

Knitters' Resistance to Worsted Yarn Prices Said Reflected in Spinners' Accumulations

The knitted outerwear trades last month entered upon what promises to be a brisk season in bathing suits, notwithstanding radical increases in prices which are readily accounted for in code regulations for hours and wages.

Some of the presumably more popular standard numbers are up by 50 per cent, amounting to $5 to $6 a dozen to jobbers, but there will be some relatively low price abbreviated garments, for cotton is to be substituted for worsted in some extent—only in men's lines say manufacturers apologizing for the adulteration and explaining, "Well, the jobbers want price."

Worsted over cotton is the more generally adopted combination of the two fibers. Worsted singles 19s in twist with cotton in colors is being specified by some manufacturers, leaving the inference that swim suits for females also will contain a proportion of cotton for compensating for the continued high cost of worsted yarn, the markets for which have for some time been much disturbed by offerings through yarn jobbers representing spinners who had overproduced or were left with large accumulations by reason of manufacturers withholding specifications. Thus, knitters have been able to acquire considerable yarn at prices under wool parity, although some leading spinners refused concessions, maintaining their stand "to the bitter end", as some expressed their attitude.

Conditions in the knitted outerwear markets serve to show the extent to which price resistance may be carried. Manufacturers are coming into their more active period of the year, and yet are not anticipating yarn needs except when underpriced lots are made available, although around 6,000,000 pounds of wool will be taken off the market this spring in the filling of contracts already awarded and some to be awarded in March. Around 4,000,000 pounds of wool will be required for the 947,000 3½ pound U. S. Army standard blankets for which bids were received in February. The government is buying 1,000,000 yards of 20-ounce melton, which will call for another immense poundage. Bids have been opened also for supplying 1½ million pairs of woolen socks, U. S. Army standards, for the CCC, and more than three quarters of a million of wool drawers and shirts, all of which obviously contributes to the tenacity with which owners of wool are holding for prices, at the dawn of the 1934 domestic shearing season.

The production season for sweaters opened rather inauspiciously, but is showing much improvement, so far as relates to spring and summer lines. Cotton sweaters are shown in apparently greater number than ordinarily, and there are the usual offerings of worsted plated on cotton. It is stated experiments of cotton-core for worsted have been unsatisfactory.

Selling Full-Fashioned in the Grey

Trading in full-fashioned hosiery in the gray has assumed proportions that give it a distinctive place in marketing the product of many small mills by the manufacturers. Not only are a few intermediaries buying in the gray, they also are selling it in the unfinished state, with the result that more specialists in finishing have gotten into the picture, some at least aiming at improvement in the goods in appearance and commanding wider acceptability on the part of women shoppers.

"We would not think of dyeing and finishing," says the chief executive of a rather prosperous plant of around a dozen modern machines. "We could not do the work any better or for at less cost than it is done by concerns fitted out specifically for mass output under most exacting requirements."

A manufacturer operating twice as many machines, mostly of 42-gauge, expresses a like sentiment and sells only in the gray. A well known mill having an especially favorable outlet for more than it can produce buys stockings in the gray from several small establishments and is and for many months has been shipping out its capacity output and that for all of its sources of supply.

John P. Nissen, Philadelphia, formerly associated with the Cadet Knitting Co., and since a consultant for manufacturers, is active in the distribution of gray hosiery, and recently Samuel Wollman, formerly associated with the Triple-Wear Hosiery Co.—no longer manufacturing—became a buyer in this class, with headquarters at 21st street and Allegheny avenue, Philadelphia, where finishing is done by the Lady of Refinement Hosiery Co. This concern is finishing a great deal of fine-gauge hosiery, two-thread 51-gauge being apparently one of its specialties, and, it is stated, is preparing considerable of the ringless for retailing. The dyeing is left to an old established concern widely known among silk hosiery manufacturers in the Pennsylvania-New Jersey territory. Several Philadelphia mills are reported disposing of their finishing rooms, since finishing has made much progress as a distinct industry. The Lady of Refinement Co. plans to enlarge its plant to a capacity of 10,000 dozens of finished hosiery per week.

It's easy to see why so many Hosiery Manufacturers are using "Brosco" Silk Finishes

—to obtain any desired degree of Low Lustre, Water and Spot Proofing, Softness and Elasticity in one bath.

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Finishing Compound S. P.
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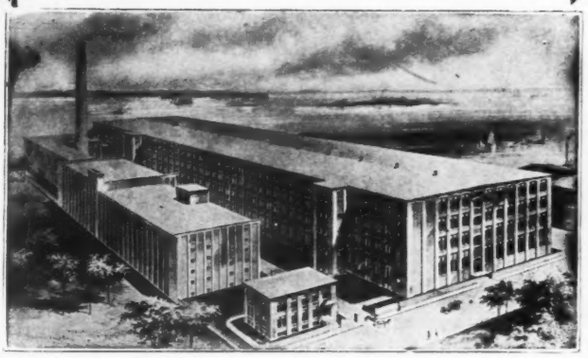

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Ply Yarns our Specialty.

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1910 QUISSETT MEANS QUALITY 1934

Wm. M. Butler, Pres.
Edward H. Cook, Treas. Thomas F. Glennon, Agent

REVIEW OF THE YARN MARKET

Philadelphia, Pa., February 17, 1934.

STEADILY rising prices for cotton yarns probably are to be regarded as the response to demand for filling government contracts rather than as reflecting any material improvement in buying for strictly civilian uses. Yarn prices have lately been following advances in cotton more closely than in recent months. This may be taken as indicating that manufacturers have eventually come to realize that the promise on the part of Recovery Administrators to put commodity prices on a higher level is to be fulfilled.

Carded yarns continue to show a nearer approach to boom times activity, and the business late in February was more evenly divided as between knitting and weaving numbers, than in January. With most of the local houses, underwear yarns have been relatively the more active in the carded group, this conforming to reports of substantial bookings by leading manufacturers of men's, boys' and women's cotton underwear. The knitted outerwear trades have been calling in some coarse counts of carded since the middle of January, orders from that quarter showing an increase in February.

To close observers in the trade, the outlook after the middle of February was clearly for a month or two of fairly brisk selling. The situation from a sales standpoint grew stronger when prices for 10s carded reached 30 cents, some concerns at that time asking 33-4 cents for double carded grade. Several houses specializing in what is referred to as high grade yarn feel that all trade publication price lists ought to present the range of quotations for both good average and high grade. Some buyers retort with the comment there would be no limitation on quotations for high grade and shipping of average grade.

Some of the finer counts of carded yarn were in fairly good movement in January, in a way preparing the market for the rise of February. In the week ending January 27, shipments by one group of operatives were reported at 250,000 pounds of 30s and 150,000 pounds of 26s and 28s, both single carded. Prices in the accompanying table are regarded in the Philadelphia trade as on the high side.

Declining for some weeks, sales and shipments of combed peeler single yarns showed only minor changes in January from December, and these are accounted for mainly in that reports for December cover each of five weeks, while only four weeks are shown in the computation for January. Sales of combed peeler ply yarns showed a healthy increase in January. In February prices became firmer, but advanced only slightly in the first three weeks, while carded was moving up at the rate of around a half cent a day. Combed singles 30s were sold at 42 to 42½ cents and 38s five cents more. Combed singles have been in slow movement, while sales of ply in the four weeks reports for January were over seven million pounds more than shown as an aggregate for the five weekly reports for December.

A considerable weight of under-priced yarn was moved off the market during February, some interests apparently swinging their low price contracts. There was an easing in price competition as the month advanced, however, few manufacturers receiving what might be termed low price yarn.

A better measure of activity in mercerized yarns developed in February, several establishments reporting materially more interest and a corresponding increase in sales. An order for 60,000 pounds of mercerized for export had to be halved due to inability to give the buyer desired deliveries.

Philadelphia prices, published February 17, follow:

Single Carded Skeins

10s	29	12s	29½
14s	30	16s	30½
20s	32	24s	34
26s	35	30s	37

Single Carded Warps

10s	29½	12s	30
14s	30½	16s	31
20s	32½	26s	35½
30s	37		

2-Ply Carded Skeins

10s	29½	12s	30
14s	30½	16s	31
20s	32½	24s	34½
26s	35½	30s	37½
40s	43½		

2-Ply Carded Warps

10s	30	12s	30½
14s	31	16s	31½
20s	33	24s	35
26s	36	30s	38
40s	44		

Ordinary Quality Carded Knitting Yarn on Cones

10s	29½	12s	30
14s	30½	16s	31
18s	31½	20s	32½
22s	33½	24s	34½
26s	35½	30s	37½
40s	44	30s tying in	36

Double Carded Grade Carded Knitting Yarn on Cones

10s	31	12s	31½
14s	32	16s	32½
18s	33	20s	34
22s	35	24s	36
26s	38	30s	39
40s	45		

Carpet Yarns

8s and 9s white warp twist	28
8s tinged tubes	27
8s part waste	25½

Two-Ply Combed Skeins and Warps

16s	41	20s	43
24s	44	30s	48
40s	52	50s	58
60s	63	70s	73
80s	83		

Single Combed Yarn on Cones

10s	36½	12s	37
14s	37½	16s	38
18s	39	20s	40
24s	42	26s	43
30s	45	36s	48
38s	49	40s	50
50s	55	60s	62
70s	72	80s	82

Quotations from "Daily News Record".

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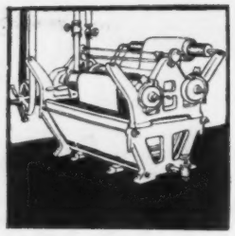

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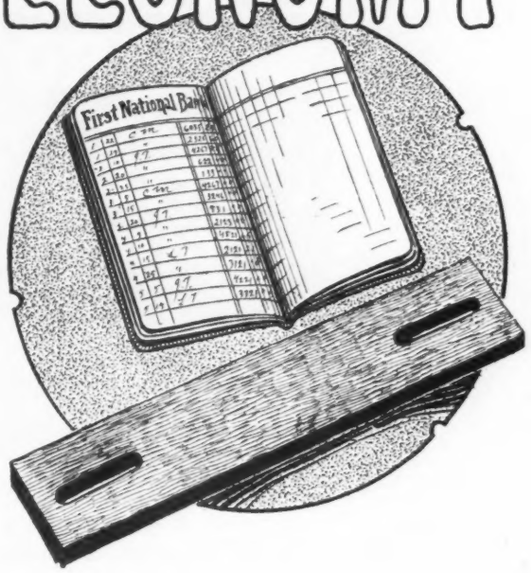

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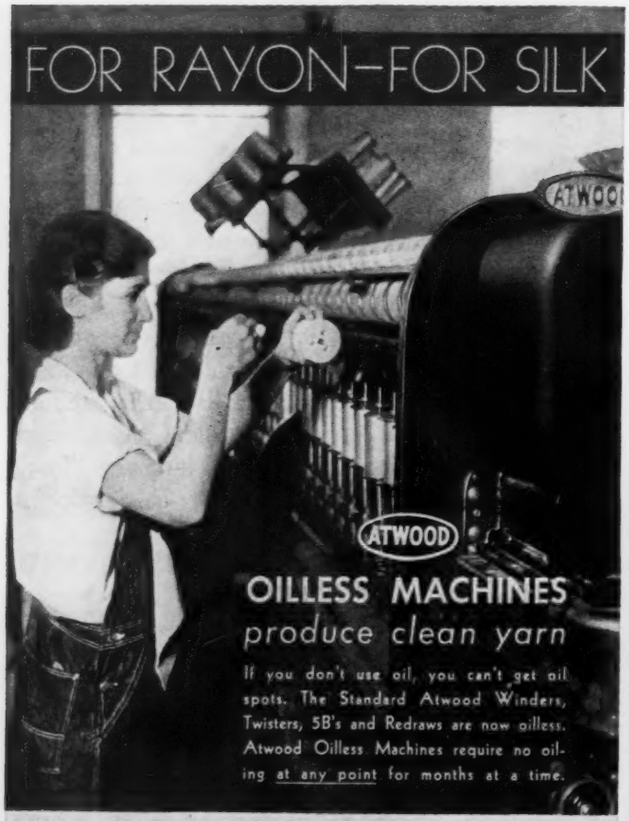
ALWAYS STANDARDS OF EXCELLENCE

FOR RAYON—FOR SILK

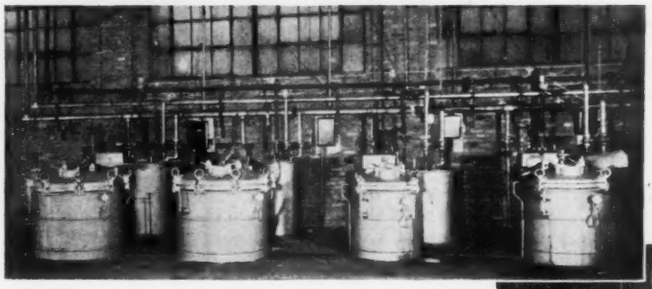


ATWOOD
OILLESS MACHINES
produce clean yarn
If you don't use oil, you can't get oil spots. The Standard Atwood Winders, Twisters, 5B's and Redraws are now oilless. Atwood Oilless Machines require no oiling at any point for months at a time.

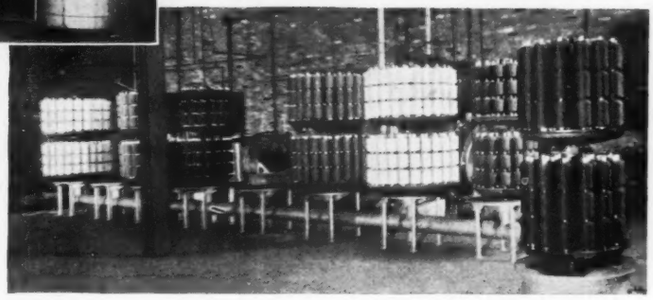
THE ATWOOD MACHINE COMPANY, STONINGTON, CONN., U. S. A.
Sales Offices: New York Wilkes Barre, Pa. Stonington, Conn. Charlotte, N. C. Los Angeles, Cal.
ATWOOD MACHINES PRODUCE THE BULK OF AMERICA'S SILK AND RAYON YARNS

HURLEY-JOHNSON CORP.
25 WALKER ST., NEW YORK
SOLE AMERICAN AGENTS FOR
JAMES KENYON & SON, LTD.
BURY, LANCASHIRE, ENGLAND
Celebrated
LAPPINGS and BLANKETS for PRINTING MACHINES
CLEARER, ROLLER and SLASHER CLOTHS.
For Best results in Sanforizing use
KENYON'S ENDLESS WOOLEN BLANKETS

Obermaier



Package Dyeing and Drying in a Complete Cycle



The packages are dyed and dried on the same material carriers—eliminating hydro-extractors and labor.

Packages remain clean and in their original forms.

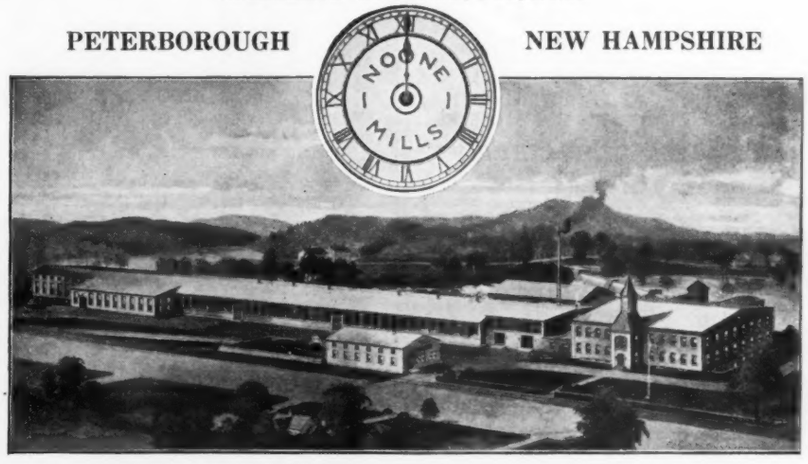
The same system applies to Roving, Slubbing and Beams.

AMERICAN OBERMAIER CORP., 11-20 Forty-Ninth Ave., Long Island City, N. Y.

The Joseph Noone's Sons Company

A. ERLAND GOYETTE, Proprietor

PETERBOROUGH NEW HAMPSHIRE



Manufacturers of

Roller—Clearer—Slasher Cloths

Experience of 100 years behind the selection of most suitable grades of stock for proper blending and manufacture of these cloths.

Insist on Noone's Cloth

Wm. R. Noone & Co., Selling Agents

A. T. MALONE, Mgr., 105 Washington St., Boston, Mass.

Southern Office: 11 James Street, Greenville, S. C.

Cotton Card Grinders
Woolen and Worsted Card Grinders
Napper Roll Grinders
Calender Roll Grinders
Shear Grinders

B. S. ROY & SON CO.

Established 1868
Worcester, Mass., U. S. A.

B. S. ROY & SON CO. 1868 MADE IN AMERICA TEXTILE GRINDING MACHINERY WORCESTER, MASS. U.S.A. SHIPPED THE WORLD OVER

ROY

**ONCE Fenced . . . . .
ALWAYS PROTECTED**

Fenced property commands respect! A staunch Stewart Non-climbable Chain Link Wire Fence provides permanent protection against evil intent trespassers. Stewart construction includes many points of advantage —all of which have met with approval among many leaders in the Textile Industry.

Write for the address of your local Stewart representative.

The STEWART IRON WORKS CO., Inc.
210 Stewart Block
CINCINNATI — OHIO

Close up detail of Stewart Oval Back I Beam Fence post with integral [one Piece] extension arm.

ATLANTA HARNESS & REED MANUFACTURING CO.

MANUFACTURERS OF

HARNESS
COTTON — MAIL EYE
SELVAGES
SPECIAL TWIST CABLE

REEDS
COTTON — DUCK
ALL METAL
SLASHER-COMBS-STRIKING

NUMBERED DUCK ALUMINUM HEDDLE FRAMES

All Types Heddle Frames and Heddle Frame Parts
Standard Flat Steel Heddles

Satisfactory Service Since 1919

Main 0517-8 ATLANTA, GEORGIA P. O. Box 1375

There is Nothing like

REG. U. S. PAT. OFF.

CALF
for Roller Covering
R. NEUMANN & CO.
Hoboken, N. J.

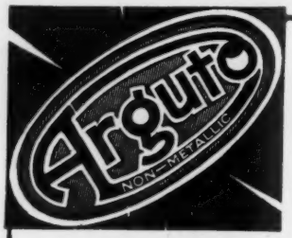
Pays Twice Its Cost

A Loper contract contains the guarantee that its service will pay you at least twice the amount it costs you.

Let us give you references that prove we accomplish even more than we guarantee.

Fully 25% of All Cotton Textile Spindles in the U. S. are operated on the Loper System.

Ralph E. Loper Co.
INDUSTRIAL ENGINEERS
Specialists in Textile Cost Methods Over 21 Years.
FALL RIVER, MASS. GREENVILLE, S. C.



20 years without a drink—

"First bought 'Arguto' bearings 25 years ago . . . still buy them because they're alright."
—unsolicited testimonial

ARGUTO OILLESS BEARING CO.
Wayne Junction, Philadelphia, Pa.

Even Yarn-Fewer Breaks!

WHY do those who have tried SUBSTITUTES FOR LEATHER go back to using leather on their rolls? Because, they have learned from bitter experience that nothing will ever take the place of good leather.

All the exaggerated figures and extravagant statements boosting substitutes are not convincing when compared with 165 years of service given by leather.

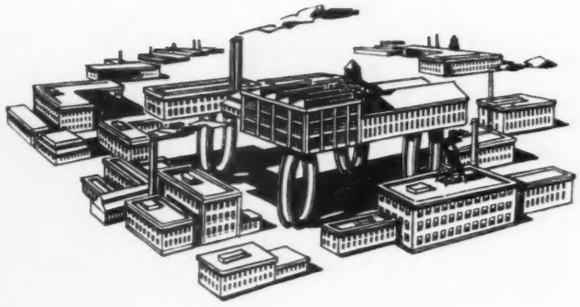
GILLEATHER means GOOD LEATHER GOOD YARN *and* GOOD PRODUCTION

GILL LEATHER CO. SALEM MASSACHUSETTS U.S.A.

GILLEATHER SHEEP and CALF SKIN For TOP ROLLS

GILL LEATHER COMPANY SALEM, MASS.

Southern Representatives:
Griffin, Ga. Belton C. Plowden.
Gastonia, N. C. W. G. Hamner.
Greenville, S. C. Ralph Gossett. and William J. Moore.



New rings can raise your mill far above the average!

It is well known that good frames can run faster than the traveler-and-ring action will permit. That is the "bottleneck." By having your rings in the finest possible condition, you enjoy a distinct advantage—your frames can run faster than the average and yield greater production per spindle per hour. For an immediate production gain replace worn rings with new DIAMOND FINISH long-life rings!

Free samples upon request

Whitinsville (Mass.) SPINNING RING CO

Ring Makers since

1873

LOOM PICK COUNTERS

Designed and built for strenuous Textile Service

Productimeter Two Shift Day and Night Loom Pick Counter

PRODUCTIMETER LOOM PICK COUNTERS perform so satisfactorily because they are designed specifically for the requirements of Textile production ... accurate, practical, strong, reliable ... assuring long, trouble-free service.

Write for FREE BOOKLET: "The Pick Method of Weaver Wage Payment."

DURANT MFG. CO.
1922 N. Buffum Street
MILWAUKEE, WISCONSIN

Productimeters
THE SPEEDOMETERS OF INDUSTRY
Established 1879

UNIVERSAL
STANDARD RING TRAVELERS

BEST MEET THE SPECIFIC REQUIREMENTS FOR SPINNING AND TWISTING

THE BOWEN PATENTED BEVEL EDGE TRAVELER VERTICAL OFFSET TRAVELER FOR EVEN SPINNING AND TWISTING VERTICAL NE-BOW TRAVELER FOR SILK, RAYON AND FINE WORSTED YARNS. A TRAVELER THAT WILL NOT UNTHREAD. ESPECIALLY DESIGNED FOR LUBRICATING RINGS.

Write For Samples And Particulars.

U. S. RING TRAVELER COMPANY

PROVIDENCE, R. I. **GREENVILLE, S. C.**

AMOS M. BOWEN
Pres. and Treas.

Southern Sales Representatives
Wm. P. Vaughan, Greenville, S. C.
Oliver B. Land, Athens, Georgia
Torrence L. Maynard, Belmont, N. C.

"A TRAVELER FOR EVERY FIBRE"

NEARLY half the 1600 rooms at the William Penn Hotel have now been reduced to $3.00 and $3.50. A NEW DEAL for everybody! The same excellent service, the same luxurious appointments at Pittsburgh's finest hotel. All rooms with bath.

HOTEL
WILLIAM PENN
PITTSBURGH

Also the FORT PITT HOTEL—good rooms from $1.50; with bath $2.00

WE SELL COMFORT WITH EVERY ROOM IN THIS HOTEL—WHILE OUR CONVENIENT LOCATION NEXT DOOR TO THEATRES, SHOPS AND BUSINESS SAVES YOUR VALUABLE TIME. HOMELIKE ATMOSPHERE THROUGHOUT — FIVE FAMOUS DINING ROOMS TO TEMPT YOUR APPETITE

dance with TED WEEMS IN THE BEAUTIFUL WALNUT ROOM

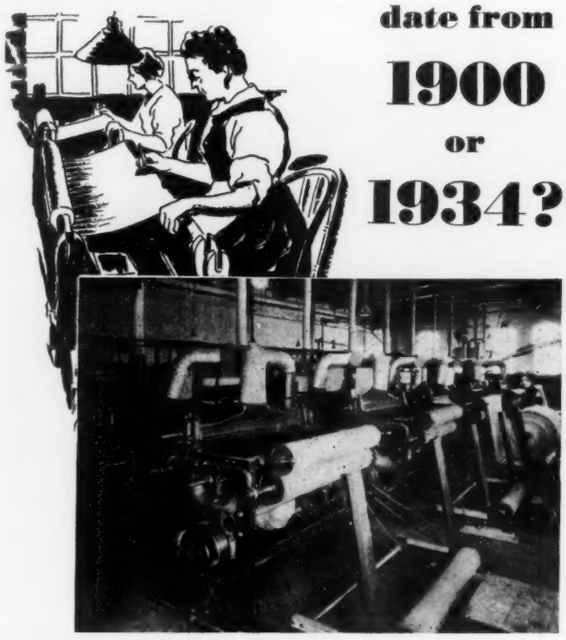
OTTO K. EITEL MGR.

BISMARCK HOTEL chicago

ROOMS WITH BATH $3.50 UP

RANDOLPH AT LA SALLE

DOES YOUR CLOTHROOM date from 1900 or 1934?



THE modernization of some mills stops at the doors of their clothrooms. These departments often date from 1900 instead of 1934.

The reasons for this neglect are two:

1. The management do not appreciate how much they can save by the installation of modern clothroom equipment.

They judge their clothroom by COST-PER-YARD instead of TOTAL PAYROLL, overlooking the fact that modern Hermas equipment can save from $50 to $500 a week. (This figure is not "just advertising." We have on file specific experiences of leading mills all over the country proving it.)

2. They think their fabrics are too fine (or too heavy) to be handled on machines.

A prominent mill man once told us, "Often I go into mills that are doing their picking by hand. They tell me their goods are too fine to handle on shears. And all the time I know other mills right in the same locality that are trimming much finer goods with entire success."

Such mills overlook the fact that every type of cotton, silk, and rayon goods is being successfully handled on Hermas machines.

It will pay you to investigate the possibilities of mechanizing your clothroom right now. You, too, may be able to save thousands of dollars a year and get BETTER results.

Come to headquarters. Over 3 times as much goods is trimmed on Hermas equipment as on all others combined—the product of well over 200,000 looms. Our modern 4-knife automatic shears don't even require an operator . . . they shear to within one foot of seams.

We'll be glad to study your special problems and make recommendations . . . without obligation.

AUTOMATIC **HERMAS** SHEARS

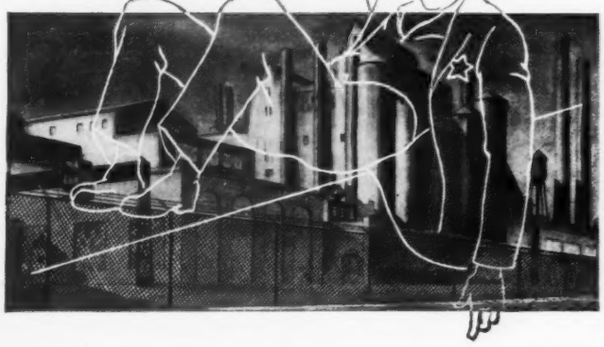
HERMAS MACHINE CO.

Warburton Ave., Susquehanna R. R., Hawthorne, N. J.

Southern Representatives: Carolina Specialty Co., Charlotte, N. C.

IF THE WATCHMAN SLEEPS . . .

WILL YOUR PROTECTION GO ON?



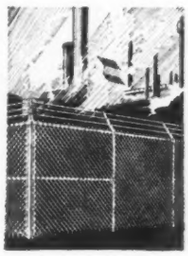
Cyclone Fence is Always on the Job . . . an Unsleeping Low-Salaried Guard

Even the most reliable watchman is subject to physical limitation. But there is no "human element" in this super-guard of steel.

Cyclone Fence provides a definite control of entrances and exits, keeps outsiders away from dangers, insures privacy for employes, reduces fire hazards and safeguards outside storage yards.

When you plan the protection of your properties utilize the forty-seven years' experience of the Cyclone Fence Company. Our sales engineers are available to make helpful suggestions and furnish accurate estimates. Our erection staff has no equal.

When you buy, consider not only the many points of superiority of Cyclone Fence but also the company behind it. Consider the fact that this fence is controlled by the manufacturer from raw ore to the completely erected barrier. That it is made of copper-steel and heavily galvanized after weaving to resist corrosion. That the erection may be done by men on our factory pay roll if you desire. Write for complete information. Address Dept. CT.



CYCLONE FENCE COMPANY

General Offices: Waukegan, Ill.

Branch Offices in Principal Cities

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

Pacific Coast Division:

Standard Fence Company, Oakland, California

Cyclone—not a "type" of fence, but fence made exclusively by Cyclone Fence Company and identified by this trademark.

Cyclone Fence REG. U.S. PAT. OFF.

Where Southern Hospitality Flowers

... The Textile Man's

Paradise

It pleases the textile man to be a guest at the Atlanta Biltmore because he knows that here every unit of service is functioning as smoothly as his mill back home.

He enjoys the comfort of a nice airy room with a luxurious bed devoid of insomnia ideas. He thrills over the good food he gets in the dining room and revels in the quiet, restful, dignified atmosphere which gives him complete relaxation after a hard day of business contacts.

Reasonable Rates:

(No court rooms)

Single, $3, $4, $5
Two in a room,
$1 to $2 additional

Room Reservations for how many?

DINING ROOM:

Breakfast, 35c, 50c, 60c, 70c.
Luncheon, 75c, 1.00.
Dinner, $1.00, $1.50.

ATLANTA BILTMORE

"The South's Supreme Hotel"

Value

When YOU Go To

PHILADELPHIA

600 ROOMS AND BATHS

A Room and a Bath For Two and a Half

$2.50 *Single with Bath*

$4.00 *Double with Bath*

WE HAVE THEM AT

HOTEL PENNSYLVANIA

20th & CHESTNUT Sts., PHILADELPHIA

This

Concave Side

Cuts Your Transmission Costs

Watch any V-Belt in action and here is what you will see—

The top of the belt, as it bends around the pulley, is under tension and grows *narrower.* The bottom is under compression and grows *wider.* The sides of the belt *bulge out.*

A straight-sided V-Belt is therefore forced to assume, in the sheave groove, the shape shown by the solid lines in figure 1. *Two* losses result.

(1) The bulging causes *uneven* wear on the sides of the belt—*shorter life!* (2) The full side of the belt does not uniformly grip the pulley—lower transmission efficiency.

Contrast with this the belt built with the *concave* side (U. S. Patent 1,400,539)—the Gates Vulco Rope.

As this belt bends, the concave side becomes straight (Fig. 2). It *exactly fits* the sheave groove. Two distinct *savings.* (1) Wear is evenly distributed over the whole side of the belt—longer life! (2) Uniform side-wall grip on the pulley—no slip—*full delivery of power!*

Engineering service and stocks available in all large industrial centers

WRITE *the GATES RUBBER CO., Denver, Colorado for Valuable Book on Transmission: FREE*

GATES VULCO ROPE DRIVES

GOLDENS' SHEAVES

LICENSED UNDER ALLIS-CHALMERS PATENT No. 1,662,511

Lengthen Life of V-Belts!

Backed by over 50 years' experience in manufacturing cast iron pulleys, rope sheaves and other transmission equipment, and made in a modern, up-to-date foundry and machine shop, Goldens' V-Belt Sheaves are accurately turned, well balanced, strong and true-running, insuring long life for your belting.

Five different sets of Arm Patterns—Light, Medium, Heavy, Extra-Heavy and Double-Heavy—and thousands of different Hub Patterns, enable us to apply the proper arm and hub to each diameter and face sheave to best suit your installation.

Now being used by leading textile mills throughout the country.

Prices gladly quoted on receipt of specifications.

GOLDENS' FOUNDRY & MACHINE CO., COLUMBUS, GA.

ALSO MANUFACTURERS OF:

Hangers
Pillow Blocks
Shaft Couplings
Cast Iron Pulleys
Ball Bearing Loose Pulleys
Ball Bearing Blower and Fan Boxes
Size Kettles
Continuous Dyeing Machines
Raw Stock Dyeing Machines
Dye Liquor Tanks
Cast Iron Tanks
Cloth Inspecting Machines

TRADING POST EXCHANGE

BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES

DISPLAY RATES

Rates are net, payable in advance each month. No commissions or discounts. Page is 3 columns, 10 inches deep—30 inches to page. Space measured by even inch vertically by 1, 2 or 3 columns in width. Column width 2¼ inches. Rates based on the total space used in one year.

	Per Inch		Per Inch
1 inch	$5.00	15 inches	4.20
3 inches	4.80	20 inches	4.00
6 inches	4.60	50 inches	3.80
10 inches	4.40	100 inches	3.60

UNDISPLAYED

Advertisements set "Want ad" style. Positions wanted .05 word per insertion. Minimum charge $1.00 per insertion. Cash with order. All other classifications .10 word per insertion. Minimum charge $2.00 per insertion. Advertisements of equipment, for sale, rent or wanted and professional cards are accepted at display rate only.

Box number addresses care of COTTON, Grant Bldg., Atlanta, Ga., count as eight words.

POSITION WANTED

Young college graduate, B.S. Textile Chemistry, Dyeing and Rayon, eighteen months' experience in processing plant, desires a change. Will consider anything in textiles. Address Box No. 113, care "COTTON," Grant Bldg., Atlanta, Ga.

POSITION OPEN

The Brooks Oil Company desire experienced boiler room specialty salesmen to cover two established territories selling Brooks Improved Boiler Metal Treatment and other products. Only well qualified and recommended need apply. Must have automobile. Drawing account and high commission. Excellent opportunity for the right men. State full experience and references. Address Brooks Oil Company, Cleveland, Ohio

WANTED

DEFAULTED BONDS

MUNICIPAL — CORPORATION

REAL ESTATE

C. R. SKINNER

DREXEL BLDG. PHILA., PA.

FOR SALE

1—Allis-Chalmers Heavy Duty Corliss Engine, 20 x 42 in., 109 r.p.m. Box Girder Frame. Left Hand Drive by Fly Wheel Pulley 15 ft. diameter x 35 in. Extra Long Range Valve Gear to allow 50% cut off. Double Eccentric.

Total Weight 65,000 pounds. Rebored and new piston and rings installed, also valves re-bored and new valves replaced within two years.

ABBOTT MACHINE COMPANY

WILTON, N. H.

FREIGHT ELEVATOR FOR SALE:

Five ton capacity freight elevator, electrically operated, all safety devices, in good condition. Address Box 114, care "COTTON," Grant Bldg., Atlanta, Ga.

FOR SALE

Horizontal Moore Geared Mixed Pressure Steam Turbine

Coupled to reducing gear 3600/450 ratio, 40 in. pulley 36 in. wide. Complete with Schutte & Koerting Multi-Jet Condenser, Bleeder Valve and low pressure throttle valve. Installed for 120 pounds high pressure, 5 pounds low pressure. 28 in. vacuum. Can be seen in operation.

ABBOTT MACHINE COMPANY

WILTON, N. H.

—SALE—

Surplus machinery, some as good as new, including dryers, tigers, shears, brushes, presses, embossing machines, shafting, pulleys, belts, power plant equipment; in fact, almost anything required in a pile fabric mill. Collins & Aikman Corp., Manayunk, Philadelphia, Pa.

IDEAL MACHINE CO.

BESSEMER CITY, N. C.

Repairers of

SPINDLES--FLYERS--STEEL ROLLS

SPINNNING SPINDLE WHORLS RE-CUT
SPINNING STANDS REAMED
DRAWING ROLLS RE-COLLARED

J. PRESTON SWECKER

PATENT LAWYER

1101 Earle Bldg., Washington, D. C.

Paul B. Eaton

PATENT LAWYER

1408 Johnston Bldg., Charlotte, N. C.

434 Munsey Bldg., Washington, D. C.

Former Member Examining Corps
U. S. Patent Office

Your Advertisement In This Section—

HAVE you some equipment, new or second hand, which you wish to dispose of; do you desire a good man to fill a vacancy in your mill; do you desire a position; do you desire your business or professional card placed before the textile industry?—

Then, why not try an advertisement in this section of COTTON? With its 10,000 copies per month, COTTON has the largest net paid circulation of any journal in the textile field. It reaches the active executives and managers, superintendents, heads of departments and master mechanics, the men directly in charge of the mill and its various departments and the men who buy or dictate the buying of machinery, equipment and supplies.

Advertising in this section produces results at small cost. Note the rates at the top of this page and tell us what you wish to advertise.

COTTON

GRANT BLDG. ATLANTA, GA.

TANKS COLE TOWERS

WHEN you are in the market for tanks, towers and kindred products, remember that 80 years of specialization in this field is at your command in COLE products. They are known all over the country for their quality and long life. We will gladly quote prices or submit designs to meet any special requirements for

TANKS TOWERS
BOILERS KIERS
ACID TANKS
STAND PIPES
SMOKE STACKS
CHEMICAL VESSELS
OIL TANKS
AIR RECEIVERS
WELDED PIPES AND TANKS
MONEL TANKS, KETTLES, ETC.

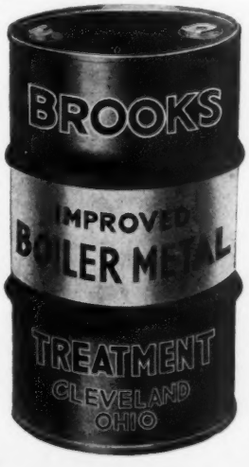
R. D. COLE MANUFACTURING CO.
NEWNAN Est. 1854 GEORGIA
FABRICATORS OF STEEL AND ALLOY STEEL PLATE

Are You Troubled With "BOGIES" in your boilers?

"Bogies" in boilers,—such as sediment, scale, corrosion, — are costing textile mills thousands of dollars daily in wasted coal and boiler repairs, not to speak of time losses through shut down for boiler cleaning.

Perhaps your engineer has tried many means to keep these "bogies" out of your boilers with more or less success — perhaps he is using mechanical methods which calls for a complete shut-down of boilers for cleaning. BUT, has he tried BROOKS Improved Boiler Metal Treatment!

If he has not yet tried BROOKS, then here's a "New Deal" for him in his fight on boiler "bogies". The hard work of mechanical scale removing is no longer necessary — the uncertainty of water analysis compounds is done away with—the harmful action of metal eating chemicals is eliminated. BROOKS is the logical, the easiest and the most thorough method of eliminating boiler scale, and **keeping it out**, — and furthermore, it **protects** the boiler metal against pitting and corrosion and imparts no odor to live steam to interfere with textile processes using steam.



Brooks has already won the approval of over ten thousand engineers who have discarded other methods of scale elimination and prevention. May we tell you all the facts!

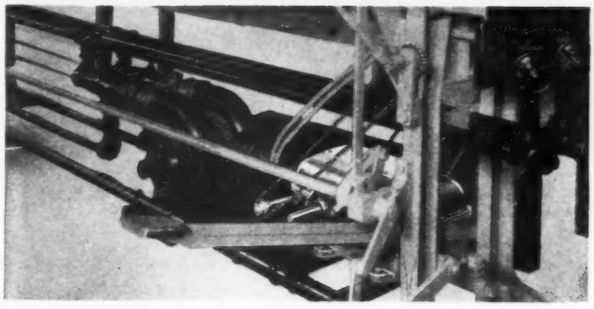
BROOKS OIL COMPANY Cleveland, Ohio

NRA MEMBER U.S. WE DO OUR PART

GUARANTEED BY BROOKS OIL CO.

CONTROL SPEED economically ON TEXTILE MACHINERY

WITH THE LINK-BELT P. I. V. GEAR



Available with Hand Wheel, Remote, or Automatic Control

FINISHED quality depends much on correct machine speed control in the textile industry. Here infinite speed control can be used to offset differences in material, labor ability, and mechanical operation.

The Link-Belt P.I.V. Gear provides this necessary speed control, being Positive, Infinitely Variable and Accurate in Power Transmission. On sanforizers, slashers, dyeing and finishing machine drives and many others, it finds an ideal application. Operated manually, by remote control, or with semi-automatic or fully automatic device.

The P.I.V. Gear is the product of years of experience, and is backed by the same reputation made famous by Link-Belt Silent Chain Drives.

Complete details are in Book No. 1274, sent on request.

LINK-BELT COMPANY

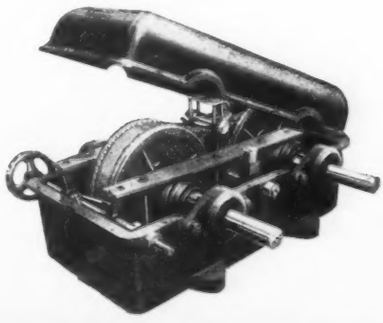
Leading Manufacturers of Positive Power Transmitting Equipment

PHILADELPHIA CHICAGO INDIANAPOLIS

Atlanta - - - - 511 Haas-Howell Bldg. Boston - - - - - 1208-9 Statler Bldg.
Baltimore, Md. - - 913 Lexington Bldg. New York - - - 2680 Woolworth Bldg.

Offices in Principal Cities

4927



NRA MEMBER U.S. WE DO OUR PART

LINK-BELT P.I.V. GEAR

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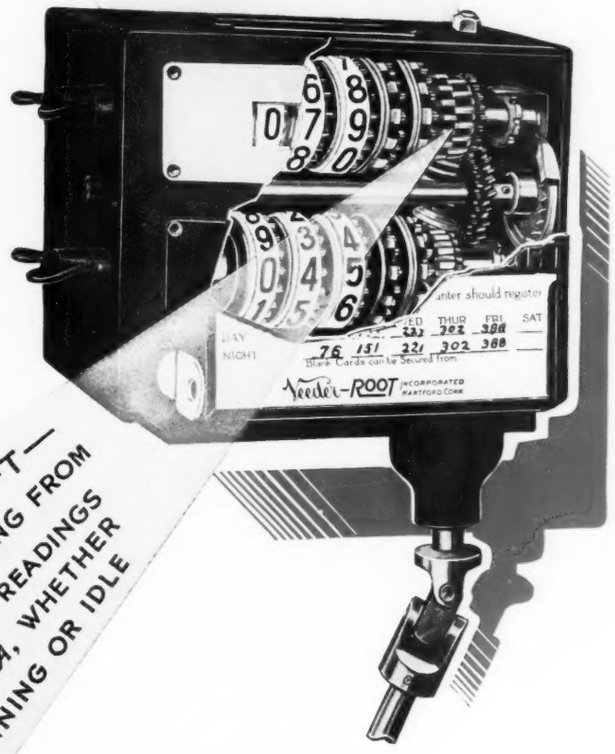

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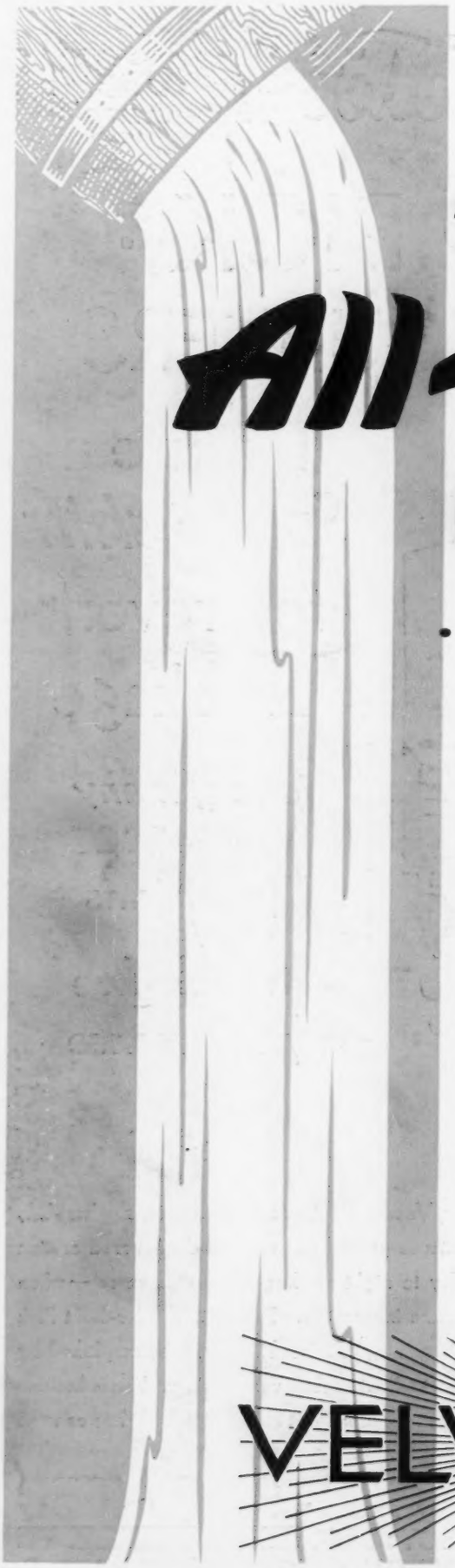

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